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UK METEOROLOGICAL OFFICE GLOBAL DATA MONITORING REPORT

MARCH, 95

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Bracknell
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CONTENTS

1. Introduction

2. Global Data Monitoring Statistics

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1. Introduction

As the WMO-appointed lead centre for monitoring surface marine data, the U.K. Meteorological Office produces monthly statistics on the quality of these observations received at RSMC Bracknell. This report includes this information along with statistics for most other types of data. The figures and tables contained herein are presented according to the agreed standards for the exchange of monitoring results.

The report is based on data received at the UK Meteorological Office Headquarters, Bracknell in time for inclusion into the appropriate analysis. The evaluation of data quality is based on comparison with the appropriate 6-hour global model forecast (background field). Generally, the background field is of high quality except in data sparse areas, tropical regions and areas close to steep orography where care should be taken in interpreting the statistics shown.

Comments or queries on the report are welcome and should be addressed to:-

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2 Global Data Monitoring Statistics

Ships, Fixed buoys, Platforms and Drifting buoys observations

TABLES 1-2 contain lists of the stations which are considered to have returned suspect observations of pressure, windspeed, wind direction or temperature, as appropriate, during the month. The criteria for quality control are given on the header page for each table.

Figures 1 and 2 show 10 degree lat/long box average numbers of SHIP/SYNOP and DRIBU observations received per day throughout the month at Bracknell and assimilated into model runs. Only data from the main hours of 00 UTC, 06 UTC, 12 UTC and 18 UTC are included. Box average values are plotted as the nearest whole number (values of x.5 are rounded up). Where the average is more than 999, then 999 is plotted. A box with no observations is blank. If the 24 hour average >0 but <0.5, then 0 is plotted.

Synop Observations

Table 3 contains a list of stations which are considered to have returned suspect observations of Pressure during the month. The criteria for quality control are given in the header page. The reporting practice of each station is included in the list of statistics.

At RSMC Bracknell, for synoptic stations at or below a height of 500 metres, reported mean sea-level pressure is used in the statistics. If this is unavailable the mean sea-level pressure is calculated from the reported station-level pressure and temperature.

For synoptic stations above 500 metres, the mean sea-level pressure is calculated from the reported station-level pressure and temperature, or, if these are not available the height of a standard pressure-level (e.g.: 850 hPa or 700 hPa). If neither of these are available, the reported mean sea-level pressure is used.

Some stations vary their reporting practice according to the observation hour (e.g.: some stations in the CIS report both mean sea-level and station-level pressure at 00 & 12 UTC, but only mean sea-level pressure at 06 & 18 UTC). For monitoring purposes, reported mean sea-level pressure is stored separately from that calculated from station-level pressure or height of a standard pressure-level. Only statistics for the preferred method (see above) are presented in this report, and so for certain high-level stations, such as those from the CIS, approximately half of the number of observations actually received will appear in the statistics.

Aircraft observations

TABLE 4 contains a list of statistics calculated from data received from all airline carriers.

Figure 3 shows 10 degree lat/long box average numbers of AIREP/ASDAR reports received per day throughout the month at Bracknell and assimilated into model runs in the layer 70-500 hPa. Observations with a vector wind difference (compared with the model background field) of >60 ms^{-1} have been excluded. Box average values are plotted as the nearest whole number (values of x.5 are rounded up). Where the average is more than 999, then 999 is plotted. A box with no observations is blank. If the 24 hour average >0 but <0.5, then 0 is plotted.

Figures 4-7 show wind statistics for AIREP/ASDAR in the layer 70-500 hPa. Observations with a vector wind difference > 60 m s^{-1} have been excluded. Statistics have not been calculated for 10 degree lat/long boxes containing <31 observations.

Figure	Parameter
4	Mean wind vectors
5	Mean observation - background wind vector
6	Mean observation-background speed (m s^{-1})
7	RMS observation-background vector (m s^{-1})

Radiosonde Observations

TABLES 5-7 contain lists of the stations which are considered to have returned suspect observations of geopotential height, vector wind or wind direction, as appropriate, during the month. The criteria for quality control are given on the header page for each table.

Figures 8 and 9 show 10 degree lat/long box average numbers of TEMP 500 hPa GEOPOTENTIAL HEIGHT and TEMP/PILOT 300 hPa WIND observations received per day throughout the month at Bracknell and assimilated into model runs. Data from all hours are included. Box average values are plotted as the nearest whole number (values of x.5 are rounded up). Where the average is more than 999, then 999 is plotted. A box with no observations is blank. If the 24 hour average >0 but <0.5, then 0 is plotted.

APPENDIX I shows details of the gross error limits used in TABLES 5 and 6 and the weights used in the RMS values in TABLE 5.

Satellite Observations

Figures 10-24 show satellite wind statistics for all geostationary satellites. All plots other than **AVAILABILITY** show average data where there are > 10 observations in a 10 degree lat/long box.

Figure	Parameter Plotted	Layer (hPa)
10	Availability/average daily number	701-1000
11	Vector mean wind (observed)	701-1000
12	Observation-background vector wind difference	701-1000
13	Mean observation-background speed differences	701-1000
14	RMS observation-background vector difference	701-1000
15	Availability/average daily number	401-700
16	Vector mean wind (observed)	401-700
17	Observation-background vector wind difference	401-700
18	Mean observation-background speed differences	401-700
19	RMS observation-background vector difference	401-700
20	Availability/average daily number	101-400
21	Vector mean wind (observed)	101-400
22	Observation-background vector wind difference	101-400
23	Mean observation-background speed differences	101-400
24	RMS observation-background vector difference	101-400

Figures 25-27 show satellite mean observation-background temperature differences for NOAA-11 soundings at 500 km resolution and figures 28-30 show the same statistics for NOAA-12. Data are plotted where there are > 30 observations in a 10 degree lat/long box.

Figure	Layer (hPa)
25/28	850-1000
26/29	100-300
27/30	30-50

3 Composite Observing Systems for the North Atlantic (COSNA)

This section shows statistics for upper air (radiosonde and aircraft) and surface (drifter) data for the North Atlantic area for data received at Bracknell during the month.

TABLE 8 shows quality statistics for **Mean Sea-level Pressure, Windspeed and Wind Direction** received at Bracknell in DRIFTER code during the month for the area 10°N - 80°N, 85°W - 0°W.

TABLE 9 shows quality statistics for **Temperature and Vector Wind** received at Bracknell from aircraft during the month for the area 40°N - 70°N, 60°W - 0°W.

Table 10 - 13 show quality statistics **(Geopotential Height and Windspeed at 100 and 500 hPa)** for all TEMPSHIPS in the area bounded by 0°N - 90°N, 100°W - 40°E and selected TEMP stations within the same area.

TABLE 1

MONITORING OF MARINE SURFACE OBSERVATIONS
MONTHLY SUSPECT LIST - SHIPS, FIXED BUOYS AND PLATFORMS
MONITORING CENTRE: BRACKNELL
MONTH:March, 95

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from each unique identifier for ships, fixed buoys and platforms.

Standard of comparison :Background field from Bracknell global model.

Observation times :00, 06, 12, 18 UTC

Elements monitored :Mean sea level pressure (hPa).
:Wind speed (m s^{-1}).
:Wind direction (Degrees).

Parameters monitored

:NOBS :Number of observations received excluding duplicates.

:NGE :Number of observations with gross errors.

:PGE :Percentage of observations with gross errors.

:SD :SD of difference of observations from background values excluding those with gross errors.

:BIAS :Mean difference of observations from background values excluding those with gross errors. **N.B. a positive bias indicates the observation is veered to the background.**

:RMS :Root Mean Square difference of observations from background values excluding those with gross errors.

GROSS ERROR LIMIT :15 hPa (pressure)
:25 m s^{-1} (vector wind)

SELECTION CRITERIA :NOBS $\geq$ 20 , and one or more of the following:

1.|bias| $\geq$ 4 hPa (pressure),
$\geq$ 5 m s^{-1} (wind speed),
$\geq$ 30 degrees (direction).

2.SD $\geq$ 6 hPa (pressure),
$\geq$ 80 degrees (direction).

3.PGE $\geq$ 25

IDENTIFIER	HOUR	ELEM	LEVEL	NOBS	NGE	PGE	SD	BIAS	RMS
MEAN SEA LEVEL PRESSURE									
DEFL	ALL	MSLP	SUR	64	1	2	1.5	-8.8	8.9
DIOR	ALL	MSLP	SUR	46	0	0	1.4	4.3	4.5
D5NE	ALL	MSLP	SUR	46	0	0	1.6	6.0	6.2
HSBN	ALL	MSLP	SUR	23	0	0	1.0	-4.5	4.6
LACF4	ALL	MSLP	SUR	33	0	0	1.4	-5.4	5.5
OXWJ2	ALL	MSLP	SUR	78	7	9	6.0	3.0	6.7
P3XM4	ALL	MSLP	SUR	44	1	2	1.2	-4.7	4.9
UFAA	ALL	MSLP	SUR	43	0	0	1.2	5.9	6.0
UOPM	ALL	MSLP	SUR	24	19	79	1.0	-3.1	3.3
URHH	ALL	MSLP	SUR	22	0	0	1.5	7.4	7.6
USLG	ALL	MSLP	SUR	31	2	6	5.1	4.3	6.7
UTTT	ALL	MSLP	SUR	25	0	0	1.4	-5.2	5.4
WAO9082	ALL	MSLP	SUR	32	27	84	0.9	-0.7	1.2
ZBWP	ALL	MSLP	SUR	48	0	0	0.9	4.0	4.1
3EER8	ALL	MSLP	SUR	51	0	0	1.0	-4.3	4.4
3EJH6	ALL	MSLP	SUR	24	0	0	2.0	4.4	4.8
3ESE9	ALL	MSLP	SUR	30	0	0	1.1	4.2	4.4
3EWK9	ALL	MSLP	SUR	37	0	0	1.3	4.5	4.6
3EYY8	ALL	MSLP	SUR	22	0	0	2.3	-4.2	4.8
62127	ALL	MSLP	SUR	69	22	32	8.2	1.3	8.3
WIND SPEED									
A8BV	ALL	SPEED	SUR	47	0	0	4.5	10.3	11.2
CGUM	ALL	SPEED	SUR	31	0	0	2.7	5.1	5.8
C6DY8	ALL	SPEED	SUR	31	4	13	5.0	7.8	9.2
C6JD4	ALL	SPEED	SUR	64	0	0	3.4	7.0	7.8
C6JV4	ALL	SPEED	SUR	35	0	0	2.3	5.7	6.2
ELLE9	ALL	SPEED	SUR	26	1	4	4.0	7.5	8.5
ELPB8	ALL	SPEED	SUR	32	0	0	6.8	11.8	13.6
FNRW	ALL	SPEED	SUR	48	2	4	6.5	10.2	12.1
GPIU	ALL	SPEED	SUR	55	1	2	5.8	6.2	8.5
HSGX	ALL	SPEED	SUR	33	2	6	4.8	12.6	13.5
P3LE5	ALL	SPEED	SUR	24	0	0	4.5	-10.2	11.1
P3XM4	ALL	SPEED	SUR	33	0	0	3.2	5.3	6.2
SYMK	ALL	SPEED	SUR	24	0	0	3.9	6.5	7.6
UFNG	ALL	SPEED	SUR	20	5	25	4.4	2.2	5.0
VRID	ALL	SPEED	SUR	34	0	0	5.4	5.3	7.5
V2TS	ALL	SPEED	SUR	45	1	2	3.6	5.2	6.3
WZJE	ALL	SPEED	SUR	21	0	0	6.0	5.4	8.0
62141	ALL	SPEED	SUR	46	0	0	4.3	7.6	8.7
9MBE4	ALL	SPEED	SUR	27	0	0	4.9	7.5	8.9
WIND DIRECTION									
CGUM	ALL	DIRN.	SUR	27	0	0	27.2	31.4	41.6
CG2614	ALL	DIRN.	SUR	63	0	0	29.3	41.5	50.8
C6HH4	ALL	DIRN.	SUR	21	0	0	39.1	-31.3	50.1
DVCJ	ALL	DIRN.	SUR	39	0	0	87.0	2.4	87.0
ELMG2	ALL	DIRN.	SUR	25	0	0	41.4	45.2	61.3
3EEC6	ALL	DIRN.	SUR	21	0	0	51.9	30.7	60.3
32321	ALL	DIRN.	SUR	30	0	0	80.0	-21.0	82.7
4QVU	ALL	DIRN.	SUR	59	0	0	80.7	-7.3	81.0
52001	ALL	DIRN.	SUR	57	0	0	56.4	37.7	67.8
52007	ALL	DIRN.	SUR	41	0	0	78.8	-37.7	87.3

FIGURE 1

AVAILABILITY – SHIP/SYNOP – MARCH 1995
MAIN HOURS ONLY
10 DEGREE BOX AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS
TOTAL AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS = 18968

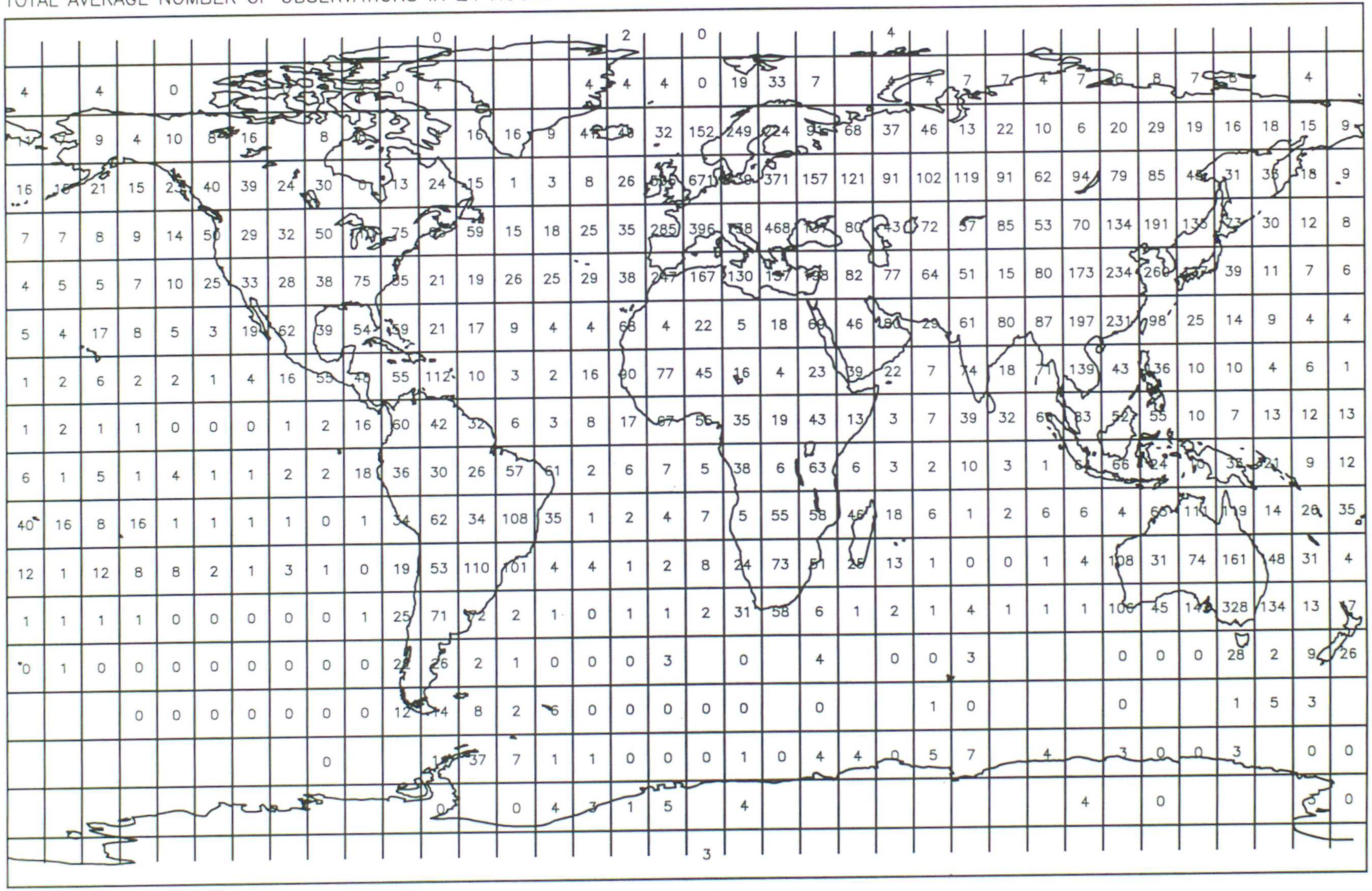


TABLE 2

MONITORING OF MARINE SURFACE OBSERVATIONS
MONTHLY SUSPECT LIST - DRIFTING BUOYS
MONITORING CENTRE: BRACKNELL
MONTH:March, 95

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from each unique identifier for drifting buoys.

Standard of comparison :Background field from Bracknell global model.

Position :Average latitude and longitude for period.

Observation times :00, 06, 12, 18 UTC

Elements monitored :Mean sea level pressure (hPa).
:Wind speed ($m\ s^{-1}$).
:Wind direction (degrees).

Parameters monitored

:NOBS :Number of observations received excluding duplicates.

:NGE :Number of observations with gross errors.

:PGE :Percentage of observations with gross errors.

:SD :SD of difference of observations from background values excluding those with gross errors.

:BIAS :Mean difference of observations from background values excluding those with gross errors.
N.B. a positive bias indicates the observation is veered to the background.

:RMS :Root Mean Square difference of observations from background values excluding those with gross errors.

GROSS ERROR LIMIT :15 hPa (pressure)
:25 $m\ s^{-1}$ (vector wind)

SELECTION CRITERIA :NOBS ≥ 20 , and one or more of the following:

1.|bias| ≥ 4 hPa (pressure),
≥ 5 $m\ s^{-1}$ (wind speed),
≥ 30 degrees (direction).

2.SD ≥ 6 hPa (pressure),
≥ 80 degrees (direction).

3.PGE ≥ 25.

IDENTIFIER	LAT.	LONG.	HOUR	ELEM	LEVEL	NOBS	NGE	PGE	SD	BIAS	RMS
MEAN SEA LEVEL PRESSURE											
16936	-39.4	58.8	ALL	MSLP	SUR	59	4	7	4.0	7.1	8.2
17610	-51.0	-3.7	ALL	MSLP	SUR	197	9	5	5.5	7.0	8.9
44770	58.4	107.3	ALL	MSLP	SUR	103	30	29	1.9	-4.6	4.9
52642	6.4	142.4	ALL	MSLP	SUR	51	0	0	2.4	4.0	4.7
65592	60.7	-14.2	ALL	MSLP	SUR	1346	30	2	2.3	5.4	5.9
WIND SPEED											
44762	52.4	-10.5	ALL	SPEED	SUR	274	0	0	5.0	-5.2	7.2
46527	44.4	171.2	ALL	SPEED	SUR	40	0	0	3.1	-5.9	6.7
52656	7.3	151.6	ALL	SPEED	SUR	186	0	0	1.4	-5.7	5.9
64544	55.8	-37.4	ALL	SPEED	SUR	142	4	3	4.2	-8.4	9.4
WIND DIRECTION											
12504	24.7	35.4	ALL	DIRN.	SUR	21	0	0	15.2	55.6	57.6
12506	22.5	37.8	ALL	DIRN.	SUR	24	0	0	10.3	49.4	50.4
12507	21.4	38.1	ALL	DIRN.	SUR	22	0	0	20.0	47.7	51.7
12508	19.0	39.3	ALL	DIRN.	SUR	25	0	0	17.0	35.0	38.9
46509	42.9	-137.9	ALL	DIRN.	SUR	131	0	0	109.1	21.6	111.2
46657	47.4	-152.7	ALL	DIRN.	SUR	128	0	0	29.4	-35.3	46.0
51502	21.3	-145.9	ALL	DIRN.	SUR	123	0	0	120.8	-7.0	121.0
55590	-40.8	174.6	ALL	DIRN.	SUR	24	0	0	10.6	-70.1	70.9
61542	40.2	1.8	ALL	DIRN.	SUR	47	0	0	122.6	-16.8	123.8
61543	38.5	4.3	ALL	DIRN.	SUR	45	0	0	95.5	17.1	97.1
61544	37.6	12.2	ALL	DIRN.	SUR	51	0	0	38.4	44.5	58.8
61545	35.5	21.8	ALL	DIRN.	SUR	38	0	0	54.0	48.9	72.8
64544	55.8	-37.4	ALL	DIRN.	SUR	123	4	3	92.1	-43.0	101.7

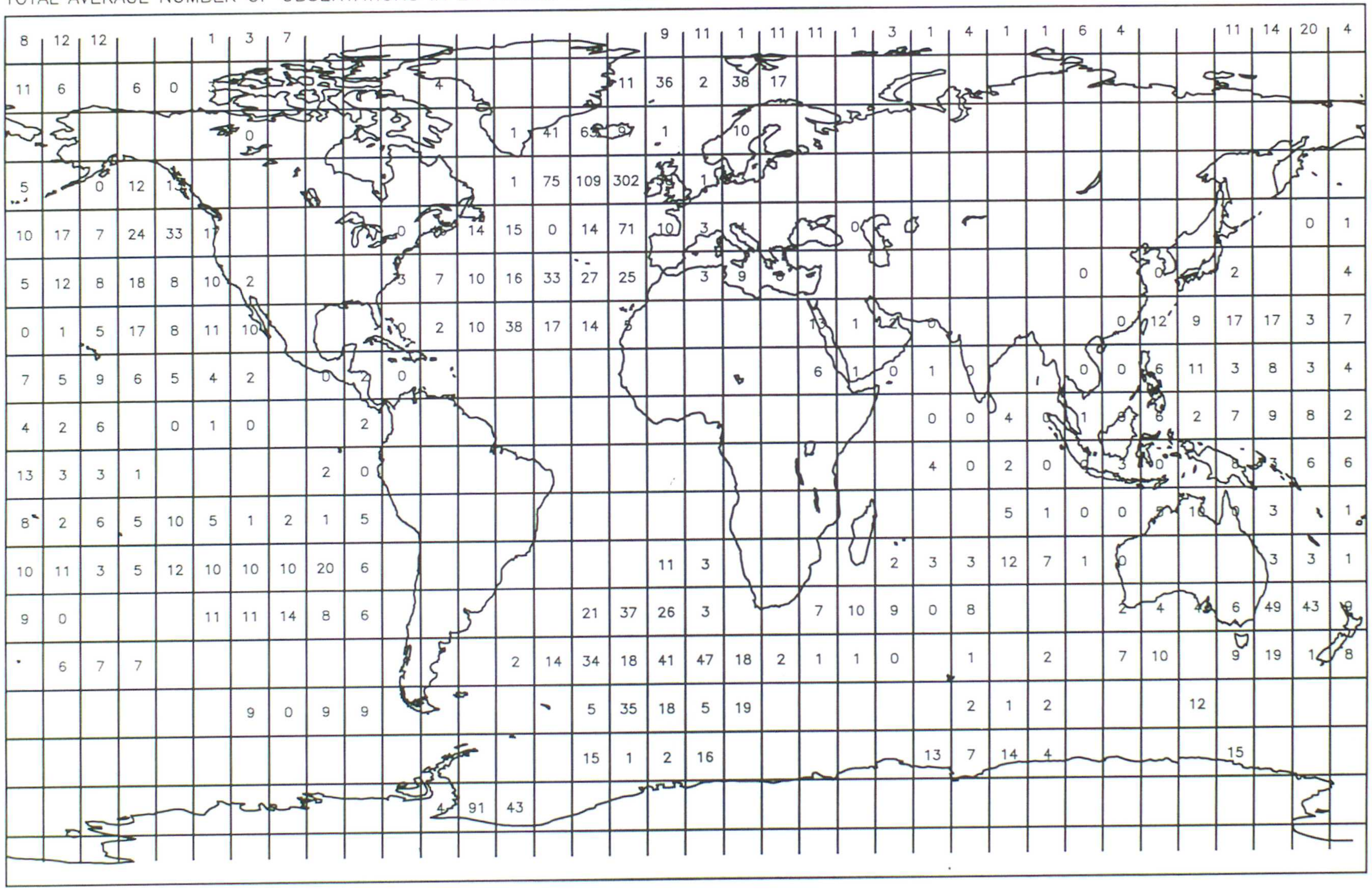
AVAILABILITY – DRIBU – MARCH 1995

FIGURE 2

MAIN HOURS ONLY

10 DEGREE BOX AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS

TOTAL AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS = 3107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5 12 8 18 8 10 2 3 7 10 16 33 27 25 3 9 0 0 0 2 4
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13 3 3 1 2 0 4 0 2 0 0 3 0 8 3 6 6
8 2 6 5 10 5 1 2 1 5 5 1 0 0 3 10 0 3 1
10 11 3 5 12 10 10 10 20 6 11 3 2 3 3 12 7 1 0 3 3 1
9 0 11 11 14 8 6 21 37 26 3 7 10 9 0 8 2 4 4 6 49 43 9
6 7 7 2 14 34 18 41 47 18 2 1 1 0 1 2 7 10 9 19 1 8
9 0 9 9 5 35 18 5 19 2 1 2 12
15 1 2 16 13 7 14 4 15
4 91 43

TABLE 3

MONITORING OF LAND SURFACE OBSERVATIONS
MONTHLY SUSPECT LIST - SYNOPS & AUTOSYNOPS
MONITORING CENTRE: BRACKNELL
MONTH:March, 95

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for synops & autosynops.
Standard of comparison		:Background field from Bracknell global model.
Observation times		:00, 06, 12, 18 UTC
Elements monitored		:Mean sea level pressure (hPa).
Parameters monitored	:HT(m)	:Station height (in metres) as given in WMO No. 9 Vol A
	:RP	:Pressure reporting practice M=mean sea level pressure (hPa) reported. S=Station level pressure reported. 8=Geopotential height (m) of 850 hPa surface reported. 7=Geopotential height (m) of 700 hPa surface reported.
	:NOBS	:Number of observations received excluding duplicates.
	:NGE	:Number of observations with gross errors.
	:PGE	:Percentage of observations with gross errors.
	:%REJ	:Percentage of observations flagged.
	:SD	:SD of difference of observations from background values excluding those with gross errors.
	:BIAS	:Mean difference of observations from background values excluding those with gross errors.
	:RMS	:Root Mean Square difference of observations from background values excluding those with gross errors.
GROSS ERROR LIMIT	:15 hPa	(pressure)
SELECTION CRITERIA	:NOBS	≥ 20 ,and one or more of the following:
	1.|bias|	≥ 4 hPa
	2. SD	≥ 6 hPa
	3.PGE	≥ 25.

Note:- For stn ht ≥ 500m, mslp is that calculated from station level pressure where available.
For stn ht < 500m, mslp is that as reported by the station where available.

WMO REGION 1:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
60445	36.2N	5.4E	1081	S8	120	0	0	91	1.0	4.7	4.8
60468	35.6N	6.2E	1052	S8	109	108	99	25	0.0	9.8	9.8
60511	35.3N	1.4E	1127	S8	121	121	100	100	0.0	0.0	0.0
60571	31.6N	2.2W	773	S8	116	1	1	21	1.4	-4.0	4.2
60670	24.6N	9.5E	1054	S8	105	2	2	97	1.2	8.8	8.9
62762	13.6N	33.6E	418	MS	29	0	0	52	1.3	4.6	4.8
63333	11.1N	39.7E	1916	MS	65	0	0	91	1.2	7.3	7.4
63453	8.8N	39.8E	1062	S	55	4	7	96	1.0	12.0	12.0
63474	7.1N	40.0E	2450	S	38	38	100	0	0.0	0.0	0.0
63478	5.1N	44.6E	320	MS	44	0	0	0	1.1	6.8	6.9
68014	19.6S	18.1E	1411	M	27	0	0	89	2.2	-6.5	6.9
68442	29.1S	26.3E	1354	S8	107	0	0	88	1.3	-5.2	5.4

WMO REGION 2:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
24671	63.9N	135.9E	400	MS	99	2	2	53	4.0	4.5	6.0
25248	67.3N	168.2E	426	MS	28	0	0	25	2.0	4.7	5.1
25902	60.8N	151.8E	797	MS	57	15	26	100	0.9	-13.4	13.4
29999	52.5N	99.8E	1570	S8	102	102	100	93	0.0	0.0	0.0
30554	54.5N	113.6E	995	MS	61	1	2	97	1.9	10.1	10.3
30739	52.2N	109.8E	666	MS	58	0	0	28	1.1	-7.0	7.1
30741	52.9N	110.5E	1255	S8	117	5	4	27	2.4	-5.1	5.6
36870	43.4N	77.0E	663	MS	62	62	100	100	0.0	0.0	0.0
38836	38.6N	68.8E	824	MS	52	1	2	6	1.6	4.1	4.4
40701	39.3N	44.4E	1470	MS	77	1	1	95	1.2	7.0	7.1
40740	36.8N	54.3E	1287	MS	31	0	0	6	1.7	-4.2	4.5
40743	36.2N	57.7E	941	MS	107	1	1	30	1.3	-5.2	5.4
40762	35.3N	59.2E	1333	MS	108	28	26	100	0.9	-13.5	13.5
40763	35.2N	58.5E	1060	MS	33	0	0	18	1.4	-6.1	6.3
40783	32.4N	49.7E	1972	MS	30	2	7	90	1.5	-7.8	7.9
40789	33.8N	55.1E	921	MS	55	0	0	100	1.1	8.2	8.3
40818	31.2N	52.7E	2004	MS	69	0	0	13	1.2	-4.4	4.6
40836	30.8N	51.7E	1880	MS	70	0	0	89	1.2	6.9	7.0
40859	29.0N	53.7E	1383	MS	67	3	4	97	1.2	8.9	9.0
41244	24.2N	55.8E	299	M	115	0	0	43	1.6	6.8	7.0
41254	23.1N	57.7E	1755	S8	87	87	100	61	0.0	0.0	0.0
44232	49.4N	102.7E	933	MS	86	0	0	22	1.9	-4.8	5.2
44277	46.4N	96.3E	2147	MS	91	3	3	33	1.9	-6.2	6.5
44416	28.6N	81.6E	720	MS	68	1	1	9	1.6	4.6	4.9
44477	27.0N	87.4E	1445	S8	63	62	98	97	0.0	-2.4	2.4
47022	40.8N	128.2E	1206	S	113	1	1	51	1.4	4.1	4.3
51334	44.6N	82.9E	321	M	123	0	0	26	3.3	4.3	5.4
52602	38.8N	93.4E	2734	S	122	0	0	28	2.3	-7.1	7.5
55696	28.4N	92.5E	3861	S	107	0	0	24	2.7	-4.7	5.4
56144	31.7N	98.6E	3204	S	105	0	0	22	2.2	-4.5	5.0
56287	30.0N	103.0E	629	M	123	0	0	2	2.3	6.1	6.5
56444	28.5N	98.9E	3488	S	122	122	100	100	0.0	0.0	0.0
56462	29.0N	101.5E	2994	S	109	0	0	66	2.6	5.1	5.7
57816	26.5N	106.7E	1222	MS	123	119	97	99	0.4	14.5	14.5

WMO REGION 3:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
80099	7.1N	70.7W	128	M	40	0	0	0	1.5	-5.1	5.3
80431	9.9N	67.3W	429	MS	108	1	1	0	1.5	-4.3	4.6
80432	9.4N	66.9W	161	MS	63	0	0	60	2.4	-5.9	6.4
80434	9.2N	66.0W	125	MS	32	0	0	38	2.2	-4.8	5.3
82067	0.6N	69.2W	120	MS	32	0	0	19	3.5	4.9	6.0

WMO REGION 3:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
82704	7.6S	72.7W	170	MS	79	1	1	1	2.4	-4.3	4.9
83208	12.7S	60.1W	652	MS	66	1	2	11	1.8	4.9	5.2
83235	12.3S	46.4W	660	MS	82	0	0	73	1.8	6.3	6.6
83332	14.1S	46.4W	950	MS	83	16	19	99	1.2	13.1	13.2
83423	16.7S	49.3W	729	MS	87	0	0	67	1.4	-5.6	5.8
83488	17.8S	42.9W	1097	MS	72	72	100	100	0.0	0.0	0.0
83512	18.5S	54.8W	286	MS	56	0	0	9	3.0	-6.2	6.9
83531	18.6S	46.5W	896	MS	82	0	0	59	1.1	-6.9	7.0
83586	19.5S	44.3W	732	MS	78	0	0	9	1.0	-4.0	4.1
83587	19.8S	43.9W	850	MS	86	2	2	87	1.0	-8.0	8.1
83689	21.3S	43.8W	1171	S	61	1	2	92	1.0	4.6	4.7
83704	22.3S	53.9W	369	MS	74	0	0	80	4.8	-6.4	8.0
83781	23.5S	46.6W	792	MS	92	0	0	100	1.0	-5.8	5.9
84425	5.9S	76.1W	184	MS	54	0	0	7	3.2	4.7	5.7
84455	6.5S	76.4W	282	MS	57	0	0	2	2.1	5.4	5.8
84472	7.1S	78.5W	2622	S	20	0	0	100	1.8	-6.5	6.7
84531	9.2S	78.5W	21	MS	31	0	0	0	1.2	4.1	4.3
84658	12.6S	69.2W	266	MS	88	0	0	17	2.9	4.8	5.6
84686	13.6S	72.0W	3249	S	111	0	0	45	1.9	-7.6	7.8
84782	18.1S	70.3W	469	MS	112	0	0	8	1.8	5.4	5.7
85312	19.8S	63.9W	992	S	46	3	7	98	1.7	-11.7	11.8
85365	22.0S	63.7W	643	MS	60	0	0	77	2.9	6.5	7.1
85406	18.3S	70.3W	58	M	114	0	0	4	1.8	5.1	5.4
87046	24.4S	65.1W	905	S8	104	104	100	98	0.0	0.0	0.0
87322	31.3S	66.6W	658	MS	80	80	100	0	0.0	0.0	0.0

WMO REGION 4:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
72618	44.5N	70.5W	205	MS	57	0	0	40	1.7	4.0	4.3
76118	30.4N	109.7W	1040	MS	45	1	2	98	0.9	-12.3	12.3
76373	25.3N	105.8W	1967	MS	84	76	90	99	0.6	14.2	14.2
76539	22.1N	101.0W	1871	MS	104	0	0	86	1.5	-4.6	4.8
76632	20.1N	98.7W	2417	MS	72	2	3	94	1.2	-7.2	7.3
76692	19.1N	96.1W	13	MS	112	0	0	2	2.0	4.9	5.3
76726	18.9N	99.3W	1560	MS	93	0	0	100	1.2	-8.2	8.3
76762	17.5N	99.5W	1360	MS	101	1	1	99	0.9	11.3	11.3
76840	16.2N	93.9W	64	MS	43	0	0	0	1.3	4.4	4.6
76848	16.3N	92.1W	1530	MS	116	13	11	100	0.9	-13.5	13.5
78718	14.4N	87.6W	626	S	22	22	100	100	0.0	0.0	0.0

WMO REGION 5:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
94304	20.8S	115.4E	63	MS	109	75	69	0	0.9	0.1	0.9
98437	13.4N	122.5E	45	M	47	0	0	83	1.1	-4.4	4.5

WMO REGION 6:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
01245	62.6N	9.7E	630	MS	90	1	1	99	1.0	-5.9	6.0
03010	59.1N	4.4W	16	M	25	12	48	80	4.7	-5.3	7.1
08221	40.5N	3.6W	633	MS	116	0	0	96	1.3	6.0	6.1
11241	47.2N	15.5E	1438	S8	100	13	13	37	4.9	-4.5	6.7
11360	47.5N	14.1E	710	MS	45	0	0	49	1.3	4.1	4.3
15052	47.4N	25.6E	1541	S8	114	3	3	88	1.4	5.6	5.8
16020	46.5N	11.3E	1461	MS	66	66	100	0	0.0	0.0	0.0

WMO REGION 6:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
16614	40.4N	21.3E	604	MS	114	0	0	95	2.3	-7.3	7.7
17084	40.6N	35.0E	837	MS	118	0	0	98	1.2	7.2	7.3
17260	37.1N	37.4E	855	MS	117	117	100	100	0.0	0.0	0.0
37228	43.1N	44.6E	670	MS	61	0	0	79	2.4	-4.9	5.5
37549	41.7N	44.9E	490	M	79	0	0	10	3.0	4.3	5.2
40184	31.8N	35.2E	809	S8	122	0	0	100	1.4	6.1	6.3

ANTARCTIC:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
89208	90.0S	0.0W	2835	S7	74	74	100	5	0.0	0.0	0.0
89266	72.2S	60.3W	91	MS	66	60	91	94	9.0	-0.5	9.0
89324	80.0S	120.0W	1530	S8	75	0	0	19	3.6	-5.2	6.3
89606	78.5S	106.9E	3420	S7	115	12	10	36	3.9	-5.8	7.0
89757	73.8S	55.7E	2775	S7	88	88	100	32	0.0	0.0	0.0
89803	68.5S	102.2E	2118	S7	90	7	8	70	2.5	-9.9	10.2
89805	74.1S	109.8E	3070	S7	89	28	31	17	3.7	0.0	3.7
89811	66.7S	112.9E	1362	S8	88	4	5	65	2.7	-8.6	9.0
89828	74.5S	123.0E	3280	S7	76	1	1	12	2.7	5.3	5.9
89832	66.7S	139.8E	240	S	58	58	100	100	0.0	0.0	0.0
89847	67.6S	146.0E	30	MS	70	4	6	27	3.0	-7.1	7.7
89860	74.2S	160.3E	1772	S8	70	1	1	30	3.6	-6.6	7.5

TABLE 4

MONTHLY MONITORING OF AIRCRAFT OBSERVATIONS
MONITORING CENTRE: BRACKNELL
MONTH:March, 95

Monitoring procedures

Period	:One calendar month.
Data monitored	:Statistics for each airline carrier.
Area monitored	:90°N - 90°S, 180°W - 180°E.
Standard of comparison	:Background field from Bracknell global model.
Observation times	:All hours combined.
Level(s) monitored	:70.0 - 500.0 hPa
Elements monitored	:TEMP in °C ; WIND in m s^{-1}

Parameters monitored

:N REP.	:Number of observations received excluding duplicates.
:PG	:Percentage of observations with gross errors.
:PR	:Percentage of observations rejected by quality control including rejections from the duplicate check.
:PC	:Percentage of observations with calm winds.
:RMS	:Root Mean Square difference of observations from background values excluding those with gross errors in Temperature & vector wind.
:BIAS	:Mean difference of observations from background values excluding those with gross errors in Temperature & Wind Speed.

GROSS ERROR LIMITS	:10.0 °C ; 60 m s^{-1} Vector Wind
SELECTION CRITERIA	:N REP $\geq$ 20

		TEMPERATURE					WIND			
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
AAA	69	3	100	3.5	-0.6	76	0	7	0	13.9	3.2
AAL	4201	0	1	1.9	-0.1	4207	0	2	0	8.3	1.1
AAN	87	2	3	1.6	-0.5	79	0	6	0	9.5	1.6
AAR	1715	1	1	2.0	-0.4	1720	0	2	0	9.0	1.2
ACA	957	0	1	1.9	0.0	973	0	2	0	7.4	0.7
ACF	25	4	4	2.5	1.6	25	0	4	0	10.3	1.6
ACI	26	0	0	2.2	1.7	26	0	0	0	6.1	1.3
AEA	139	8	100	4.4	1.2	133	1	6	0	9.9	0.8
AEL	688	2	3	2.0	-0.4	690	0	3	0	8.2	1.3
AFL	147	3	100	3.2	1.5	148	1	100	1	11.4	1.0
AFR	1404	1	5	2.0	-0.3	1414	0	5	0	7.8	0.9
AIC	44	0	2	1.8	0.8	45	0	9	0	11.8	1.2
AJJ	80	4	5	2.4	0.8	80	0	4	0	11.8	3.5
AMT	401	0	2	2.3	0.6	403	0	2	0	9.5	0.3
AMX	242	0	2	2.3	-0.8	243	0	2	0	9.5	0.0
ANA	862	1	2	2.1	-0.6	862	0	2	0	8.2	1.1
ANC	29	0	0	0.5	0.0	29	0	0	0	3.2	-0.1
ANZ	3036	1	2	1.8	0.0	3025	0	3	1	8.4	1.2
AOM	733	2	3	1.8	0.6	734	0	3	0	8.9	0.9
ARG	28	7	11	2.0	0.2	28	0	18	4	15.9	0.4
ARP	83	6	10	2.3	-0.2	81	1	9	0	14.0	4.5
ATN	67	3	9	2.5	-0.8	64	0	6	0	11.9	2.7
AUA	56	0	2	1.7	-0.8	58	0	3	0	7.1	2.6
AVA	376	2	5	2.3	0.0	378	0	4	0	9.9	0.9
AVN	33	0	0	1.0	0.4	33	0	0	0	6.2	-1.1
AZA	407	1	1	2.0	0.2	403	0	1	0	7.9	1.2
BAL	166	1	13	1.9	-0.8	168	0	13	0	8.3	1.6
BAW	1431	0	5	2.0	-0.1	1441	0	5	0	8.4	1.0
BBB	57	2	14	2.4	-1.6	59	0	10	0	7.7	0.8
BWA	368	1	2	1.8	0.5	368	0	2	0	8.4	1.0
CAL	1704	1	2	2.3	-0.1	1709	0	3	0	9.6	1.2
CCA	271	2	6	2.7	-0.3	271	1	93	1	11.4	1.6
CDN	2109	0	2	2.0	0.4	2114	0	3	1	8.0	1.2
CES	165	1	1	2.2	0.2	166	0	1	0	9.6	1.3
CFC	38	0	5	1.8	-0.3	38	0	5	0	6.3	0.2
CFG	943	1	4	2.4	-1.3	948	0	5	0	8.7	0.8
CKS	75	1	1	2.1	1.4	75	1	5	0	10.1	1.3
CKT	88	0	5	1.8	-0.1	82	0	6	0	8.7	-0.1
CLI	30	0	0	2.2	0.2	33	0	0	0	9.0	2.9
CLX	84	0	1	1.8	-0.6	84	0	2	2	6.6	-1.3
CMI	1137	2	3	2.4	0.4	1159	0	2	0	9.0	1.0
CMM	235	0	66	2.5	-0.1	236	0	3	0	8.4	1.7
COA	677	1	2	1.9	0.4	685	0	2	0	8.5	0.4
CPA	42	5	2	2.1	-0.4	42	0	0	0	8.4	2.6
CRL	297	1	2	2.1	0.3	296	0	2	0	8.7	1.7
CTM	64	0	19	2.8	-1.8	64	0	19	0	9.7	3.1
CUB	180	1	7	2.8	1.7	183	0	100	0	13.2	1.6
DAF	34	0	0	1.7	0.5	34	0	0	0	6.3	-0.1
DAL	5100	0	2	2.2	0.5	4987	0	2	0	8.5	1.1
DHL	481	0	100	3.2	-0.9	488	0	1	0	9.4	-0.1
DLH	3118	0	9	2.1	0.2	3129	0	11	2	7.4	0.9
DOA	167	1	12	2.5	-0.3	166	0	10	0	8.3	0.3
ELY	146	1	12	1.9	-0.3	147	0	12	0	7.6	0.8
EVA	1637	2	3	2.3	-0.7	1653	0	3	0	9.3	1.0
FDX	872	1	2	1.9	0.8	877	0	2	0	8.7	0.9
FIN	332	0	2	2.0	0.3	329	0	2	1	7.6	0.8
FJI	448	0	1	1.7	0.9	448	0	1	0	7.6	1.7
FMN	32	0	3	1.8	0.9	32	0	3	0	7.7	0.8
GAF	74	0	1	1.7	0.1	76	0	3	0	6.0	0.7

		TEMPERATURE					WIND				
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
GFA	33	0	6	2.1	0.6	33	0	6	0	7.3	1.7
GHA	24	0	0	2.1	-0.3	24	0	4	0	9.5	1.8
GIA	253	3	3	1.5	0.0	250	0	2	0	7.3	1.2
HAL	996	0	2	2.1	0.5	999	0	3	0	10.1	0.7
HLF	132	1	2	2.3	-1.1	130	0	1	0	8.3	-0.3
IBE	1874	1	14	2.0	0.1	1854	0	14	0	9.0	0.9
ICE	342	0	0	1.7	0.2	342	0	2	1	7.3	0.0
IQQ	40	0	8	2.3	0.9	41	0	10	0	12.2	1.2
JAA	52	4	4	2.2	0.7	52	0	2	0	10.8	3.3
JAL	5570	1	2	2.1	0.1	5577	0	2	0	8.9	1.2
JAZ	60	0	0	2.2	1.2	60	0	2	0	9.2	0.8
KAL	3594	1	3	2.4	0.2	3587	0	2	0	9.0	1.2
KIW	29	3	10	2.3	1.1	29	0	7	0	6.9	-0.5
KLM	1943	1	3	2.1	0.2	1935	0	2	0	7.7	1.0
LDA	173	2	14	2.4	-1.1	175	1	14	1	8.2	1.0
LDI	269	0	1	2.5	-1.8	268	0	1	0	8.4	1.0
LIB	481	1	2	2.0	0.4	482	0	3	0	9.3	1.0
LOT	200	0	1	1.6	-0.2	203	0	0	0	5.5	-0.1
LTU	785	1	2	1.9	0.1	758	0	3	0	8.4	0.6
MAS	230	0	1	2.0	-0.5	225	1	41	1	10.3	1.9
MDA	112	3	3	2.0	0.6	113	0	4	2	7.4	1.4
MKD	53	2	2	1.8	-0.5	52	0	0	0	8.6	-0.1
MKW	20	5	5	1.3	-0.2	20	0	5	0	12.7	3.3
MPH	801	0	2	2.6	-1.4	789	0	2	0	8.0	0.7
MPK	53	2	4	2.7	1.2	56	0	2	0	8.7	-0.7
MRS	47	4	2	2.7	-1.9	48	0	8	0	13.7	6.8
NCA	650	1	1	2.0	0.3	653	0	2	0	8.6	0.9
NGA	92	1	1	1.5	0.2	91	0	100	1	11.1	-0.3
NWA	9163	1	2	2.3	0.7	9216	0	3	0	9.2	1.0
OAL	30	0	3	2.5	2.0	32	0	3	0	6.9	1.2
PAC	60	0	0	1.8	0.0	61	0	3	0	9.8	-0.8
PAL	970	2	2	2.0	-0.1	977	0	2	0	9.2	1.2
PAO	190	2	5	1.8	0.1	189	0	2	0	8.6	1.7
PIA	24	0	4	2.0	0.1	24	0	0	0	7.0	1.8
PNL	114	3	6	2.0	1.1	110	0	4	1	10.5	0.7
QFA	1770	1	3	1.7	0.3	1750	0	2	1	7.8	1.3
QFX	49	0	0	1.2	0.5	49	0	0	0	6.1	1.5
RAF	181	1	2	1.7	0.2	179	0	4	1	9.5	2.0
RIA	78	3	4	2.8	1.9	83	0	7	0	12.8	0.3
RJA	91	0	7	2.2	0.5	91	1	5	0	8.5	-0.1
RON	34	3	0	1.1	0.5	34	0	0	0	6.5	1.8
ROT	26	0	0	1.7	-1.1	26	0	0	0	5.8	2.4
RRR	120	1	27	2.8	-0.4	119	0	24	0	9.4	0.4
SAA	221	0	2	2.3	-0.3	217	0	5	0	11.7	0.1
SAB	75	0	3	1.7	-0.3	77	0	3	0	8.5	1.7
SAS	1127	0	1	1.7	-0.1	1126	0	2	1	7.4	0.3
SIA	1226	0	2	2.1	-0.7	1228	0	2	0	9.1	1.1
SOL	37	0	0	0.9	0.5	37	0	3	3	5.9	0.8
SPP	295	0	9	2.1	-0.7	292	0	9	0	9.8	0.1
SVA	96	0	7	1.6	0.0	102	0	9	0	9.4	-0.3
SWR	231	2	4	1.8	0.3	241	0	3	0	7.0	0.3
TAP	422	1	5	2.2	-0.2	418	0	5	0	8.4	1.2
TEJ	52	2	25	1.9	-0.5	53	0	25	0	7.8	0.8
THA	313	0	2	2.3	-0.8	312	0	2	0	9.1	0.7
TIH	82	1	4	1.8	-0.1	84	0	6	0	8.3	1.6
TOW	66	2	8	2.2	0.1	72	0	8	1	9.6	0.5
TWA	956	1	3	2.1	-0.2	955	0	2	0	7.8	0.8
UAL	74784	0	3	1.8	0.0	74820	0	2	0	7.5	0.8
ULE	70	1	1	1.7	-0.4	70	0	3	0	8.5	2.2

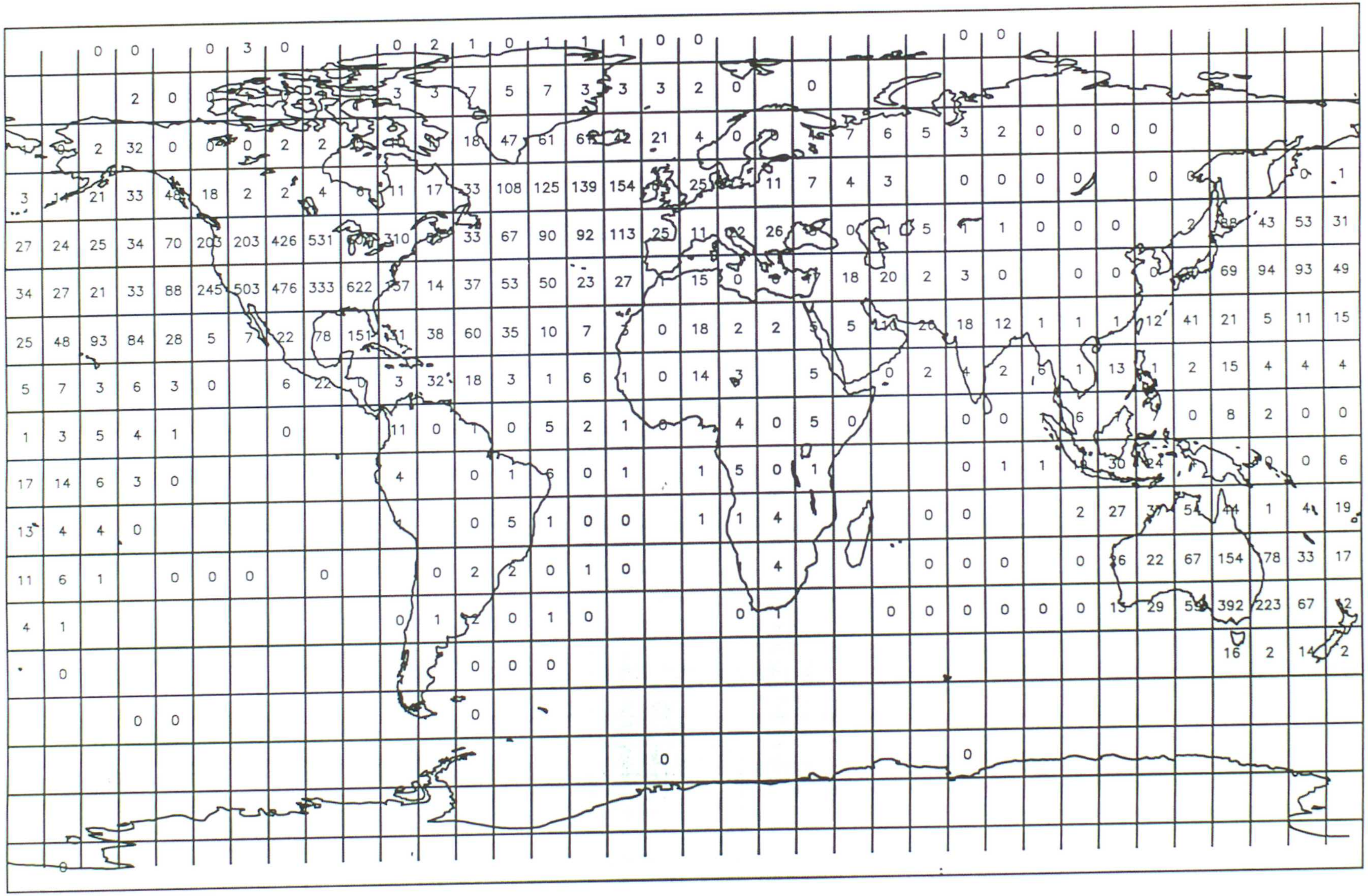
	TEMPERATURE					WIND					
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
UPS	982	1	12	1.6	-0.1	1011	0	12	0	8.3	1.1
USA	191	0	3	1.7	-0.2	196	0	2	0	6.8	1.8
VIA	441	2	3	2.0	0.6	442	0	4	0	8.8	0.8
VIR	211	0	2	1.5	0.0	213	0	1	0	7.6	2.0
VRB	20	0	15	4.4	1.4	20	0	10	0	12.1	5.4
VRG	24	0	0	2.3	1.0	24	0	0	0	8.9	0.2
VSP	99	0	1	2.6	0.7	100	1	2	0	9.0	0.6
WOA	50	0	0	2.5	1.3	49	0	0	0	7.9	0.2
AN	24434	0	1	1.3	0.2	24178	0	2	0	6.2	0.5
BA	19092	0	25	1.6	0.4	19068	0	25	0	7.0	1.3
DL	903	1	100	3.1	0.4	903	52	100	0	37.5	-0.3
KL	10667	1	31	2.3	1.4	10662	0	10	0	7.8	1.7
LH	3272	0	2	1.7	0.1	3248	0	76	0	7.2	1.2
NW	45768	0	2	1.9	0.2	45768	0	1	0	6.7	0.7
QF	14589	0	1	1.1	0.1	14566	0	1	0	6.2	0.9
M	326	1	98	3.3	1.0	331	0	98	0	11.7	2.2
N	431	1	2	2.4	0.3	445	0	2	0	9.5	1.0

MEAN DAILY COUNT OF AIRCRAFT 70 – 500 HPA

MARCH 1995

OBSERVATIONS WITH O–B VECTOR DIFFERENCE GREATER THAN 60 MPS EXCLUDED

FIGURE 3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3 14 21 33 48 18 2 2 4 6 11 17 33 108 125 139 154 25 11 7 4 3 0 0 0 0 0 0 0 1
27 24 25 34 70 203 203 426 531 600 310 8 33 67 90 92 113 25 11 22 26 0 1 5 1 1 0 0 0 2 38 43 53 31
34 27 21 33 88 245 503 476 333 622 137 14 37 53 50 23 27 1 15 0 0 47 18 20 2 3 0 0 0 0 69 94 93 49
25 48 93 84 28 5 7 22 78 151 51 38 60 35 10 7 3 0 18 2 2 5 5 14 20 18 12 1 1 1 12 41 21 5 11 15
5 7 3 6 3 0 6 22 0 3 32 18 3 1 6 1 0 14 3 5 0 2 4 2 6 1 13 1 2 15 4 4 4
1 3 5 4 1 0 11 0 1 0 5 2 1 0 4 0 5 0 0 0 1 6 0 8 2 0 0
17 14 6 3 0 4 0 1 6 0 1 1 5 0 1 0 1 1 18 30 24 0 0 6
13 4 4 0 0 5 1 0 0 1 1 4 0 0 2 27 37 54 44 1 41 19
11 6 1 0 0 0 0 0 2 2 0 1 0 4 0 0 0 0 36 22 67 154 78 33 17
4 1 0 1 2 0 1 0 0 1 0 0 0 0 0 0 13 29 55 392 223 67 12
0 0 0 0 16 2 14 2
0 0 0
0 0
0 0
0

AIRCRAFT MEAN WINDS BETWEEN 70 AND 500 HPA
MARCH 1995
OBSERVATIONS WITH O–B VECTOR DIFFERENCE GREATER THAN 60 MPS EXCLUDED
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT

FIGURE 4

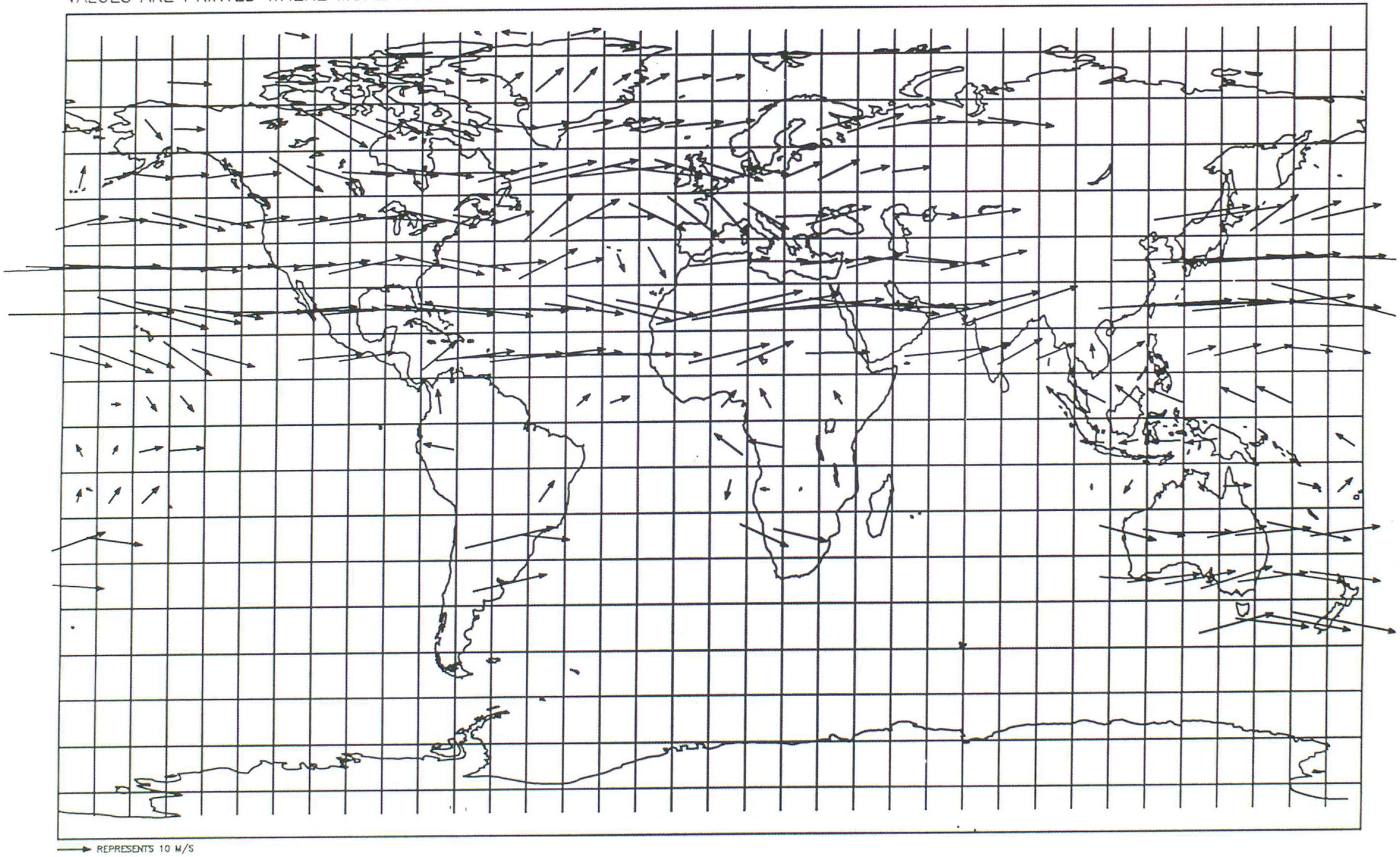
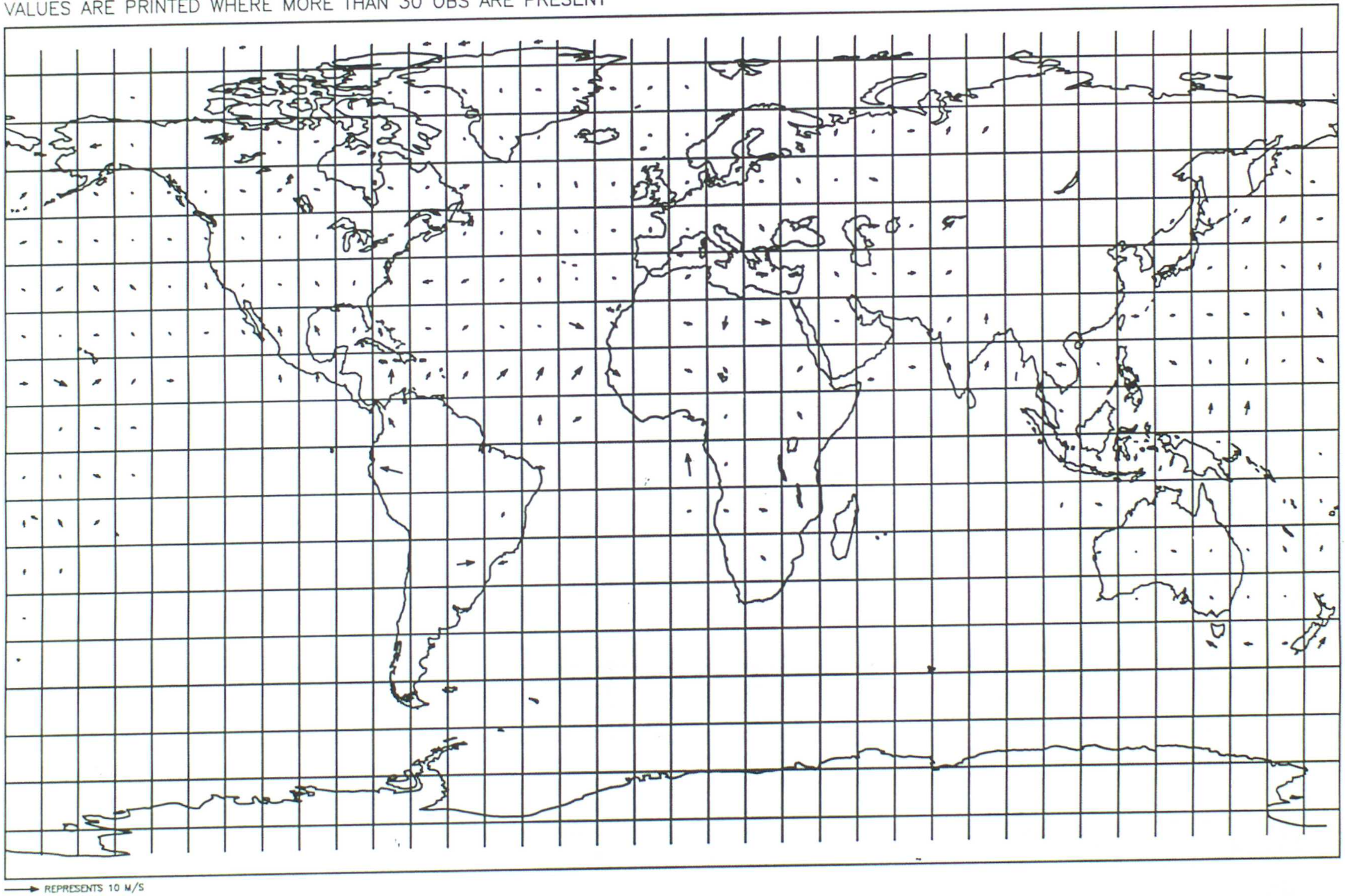
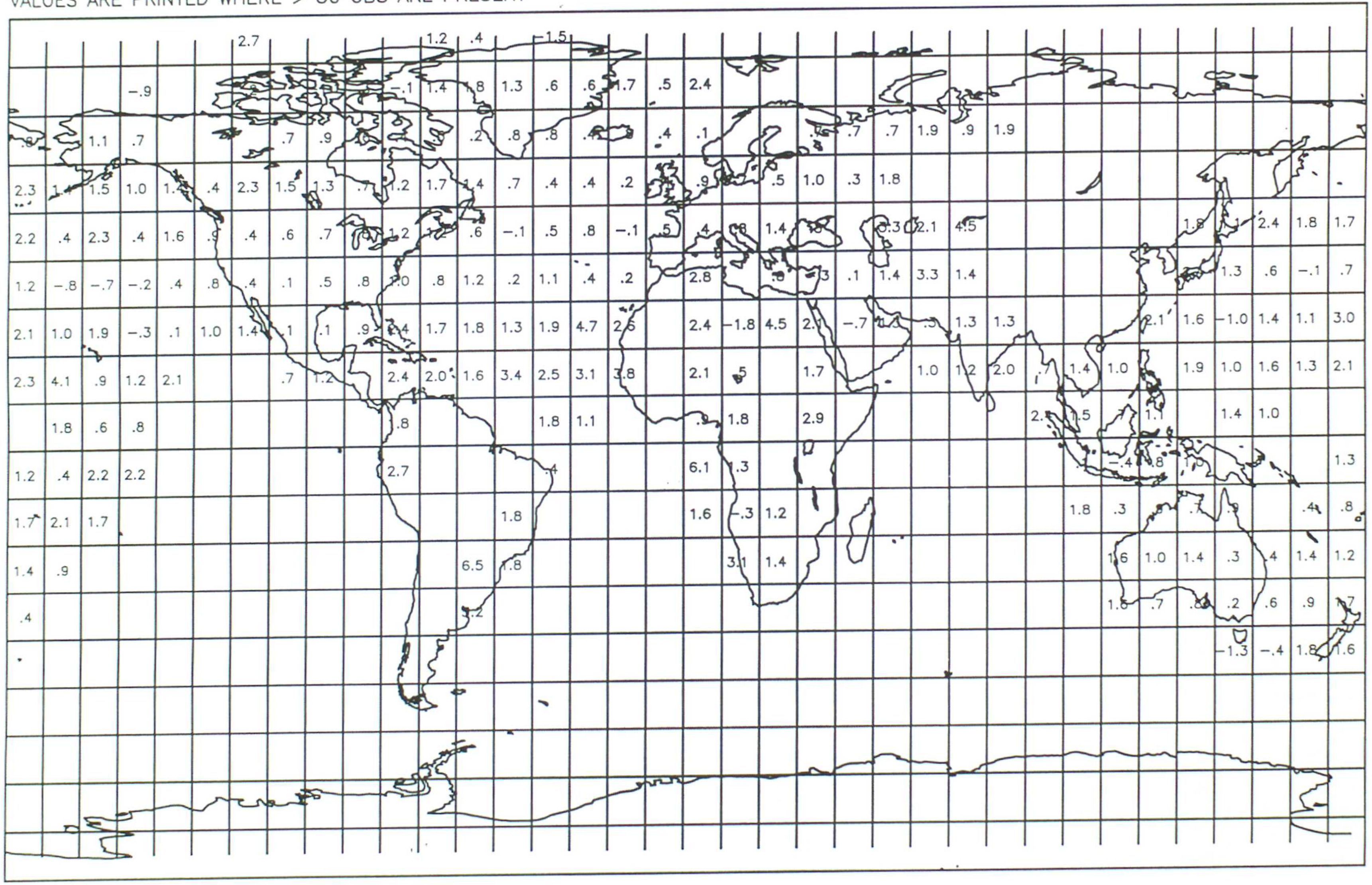


FIGURE 5

AIRCRAFT MEAN O–B WINDS BETWEEN 70 AND 500 HPA
MARCH 1995
OBSERVATIONS WITH O–B VECTOR DIFFERENCE GREATER THAN 60 MPS EXCLUDED
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT



AIRCRAFT : MEAN O−B SPEEDS (M/S) BETWEEN 70 AND 500 HPA FIGURE 6
MARCH 1995
OBSERVATIONS WITH O−B VECTOR DIFFERENCE > 60 MPS EXCLUDED
VALUES ARE PRINTED WHERE > 30 OBS ARE PRESENT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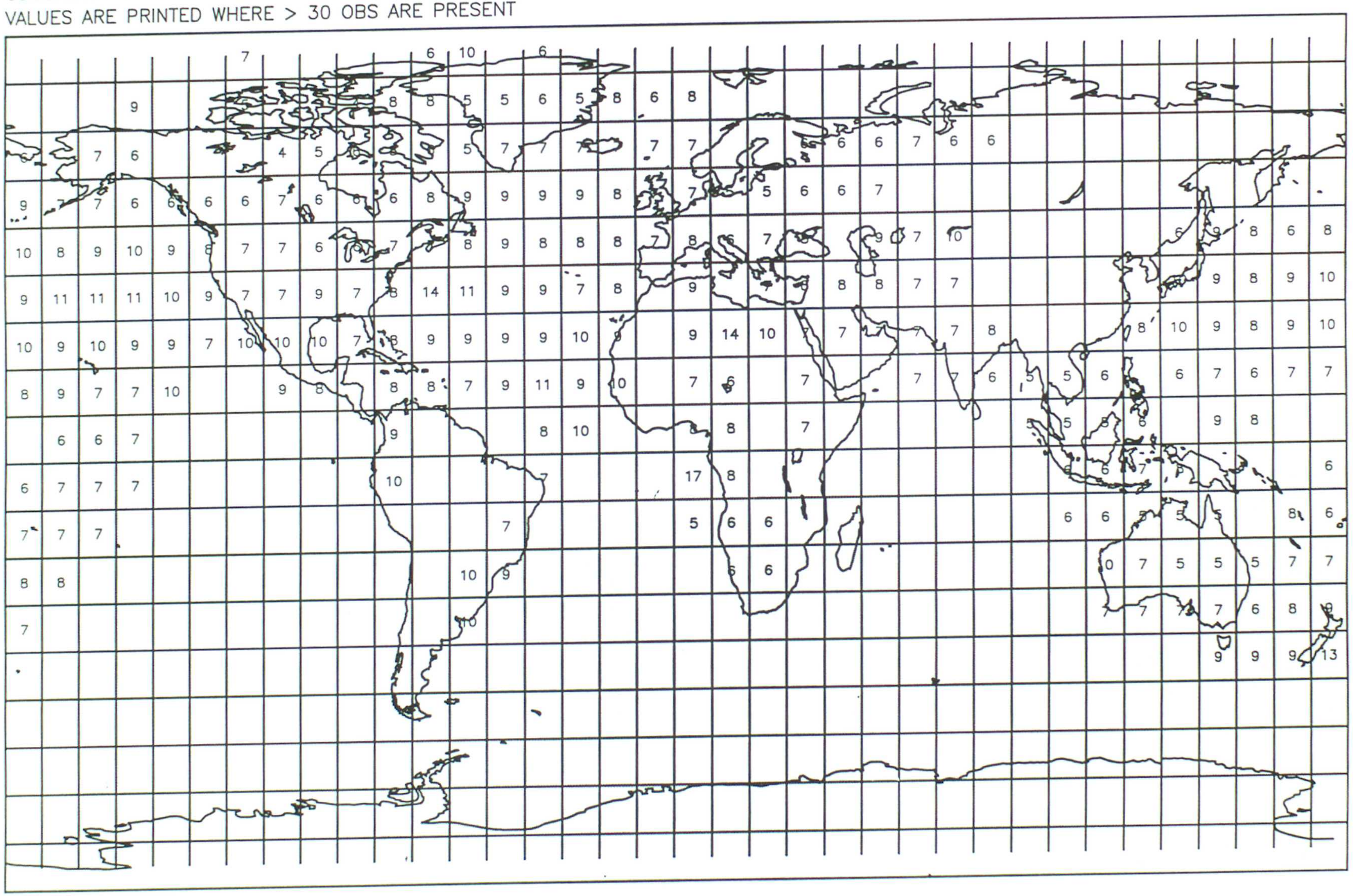
−.9 −.1 1.4 .8 1.3 .6 .6 1.7 .5 2.4
.8 1.1 .7 .7 .9 .2 .8 .8 .4 .4 .1 .7 .7 .7 1.9 .9 1.9
2.3 1.4 1.5 1.0 1.4 .4 2.3 1.5 1.3 .7 1.2 1.7 1.4 .7 .4 .4 .2 .9 .5 1.0 .3 1.8
2.2 .4 2.3 .4 1.6 .9 .4 .6 .7 1.2 .6 −.1 .5 .8 −.1 .5 .4 .8 1.4 .6 3.3 2.1 4.5 1.8 .1 2.4 1.8 1.7
1.2 −.8 −.7 −.2 .4 .8 .4 .1 .5 .8 1.0 .8 1.2 .2 1.1 .4 .2 2.8 .6 .3 .1 1.4 3.3 1.4 1.3 .6 −.1 .7
2.1 1.0 1.9 −.3 .1 1.0 1.4 .1 .1 .9 2.4 1.7 1.8 1.3 1.9 4.7 2.5 2.4 −1.8 4.5 2.1 −.7 1.3 .5 1.3 1.3 2.1 1.6 −1.0 1.4 1.1 3.0
2.3 4.1 .9 1.2 2.1 .7 1.2 2.4 2.0 1.6 3.4 2.5 3.1 3.8 2.1 .5 1.7 1.0 1.2 2.0 .7 1.4 1.0 1.9 1.0 1.6 1.3 2.1
1.8 .6 .8 .8 1.8 1.1 .9 1.8 2.9 2.5 1.5 .7 1.1 1.4 1.0
1.2 .4 2.2 2.2 2.7 .4 6.1 1.3 −.4 .8 1.0 1.3
1.7 2.1 1.7 1.8 1.6 −.3 1.2 1.8 .3 .5 .7 .9 .4 .8
1.4 .9 6.5 1.8 3.1 1.4 1.6 1.0 1.4 .3 .4 1.4 1.2
.4 .2 1.6 .7 .8 .2 .6 .9 1.7
−1.3 −.4 1.8 1.6

AIRCRAFT : RMS O-B VECTOR (M/S) BETWEEN 70 AND 500 HPA FIGURE 7
MARCH 1995
OBSERVATIONS WITH O-B VECTOR DIFFERENCE GREATER THAN 60 MPS EXCLUDED
VALUES ARE PRINTED WHERE > 30 OBS ARE PRESENT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9 8 8 5 5 6 5 8 6 8
7 6 4 5 6 8 5 7 7 7 7 7 6 6 7 6 6
9 7 7 6 6 6 6 7 6 6 6 8 9 9 9 9 8 7 5 6 6 7
10 8 9 10 9 8 7 7 6 6 7 8 9 8 8 8 7 8 6 7 9 7 10 6 9 8 6 8
9 11 11 11 10 9 7 7 9 7 8 14 11 9 9 7 8 9 7 8 8 7 7 9 8 9 10
10 9 10 9 9 7 10 10 10 7 8 9 9 9 9 10 9 9 14 10 7 7 7 7 7 8 8 10 9 8 9 10
8 9 7 7 10 9 8 8 8 7 9 11 9 10 7 6 7 7 7 6 5 5 6 6 7 6 7 7
6 6 7 9 8 10 8 8 7 5 8 6 9 8
6 7 7 7 10 7 17 8 6 6 7 5 6
7 7 7 7 5 6 6 6 6 5 5 5 8 6
8 8 10 9 6 6 0 7 5 5 5 7 7
7 10 7 7 7 7 6 8 9
9 9 9 13

TABLE 5

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS
MONITORING CENTRE: BRACKNELL
MONTH:March, 95

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for radiosonde TEMPs.
Area monitored		:90°N - 90°S, 180°W - 180°E.
Standard of comparison		:Background field from Bracknell global model.
Observation times		:00 UTC and 12 UTC.
Level(s) monitored		:Standard levels between 1000.0 - 30.0 hPa
Element monitored		:GEOPOTENTIAL HEIGHT IN metres
Parameters monitored		
	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown during period.
	:% REJ	:Percentage of observations rejected by quality control at level shown during period.
	:SD	:SD of difference of observations from background values at level shown excluding those with gross errors.
	:BIAS	:Mean difference of observations from background values at level shown excluding those with gross errors.
	:RMS	:Root Mean Square difference of observations from background values at level shown excluding those with gross errors.
	:NUM LEVELS	:Number of levels satisfying selection criteria.
GROSS ERROR LIMITS	:Defined in Appendix I.1	
SELECTION CRITERIA	:≥ 3 levels with ≥ 10 observations and ≥ 100 m weighted RMS.	

ONLY THE WORST LEVEL IS SHOWN WITH UNWEIGHTED RMS

WMO IDENT	OBS TIME	ELM	LEV	LAT/LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS	NUM LEVELS
22271	12	Z	150	68/ 44	27	0	52.4	82.3	97.5	5
23418	12	Z	200	65/ 57	28	0	48.9	92.6	104.7	8
31168	00	Z	200	56/ 138	26	0	33.9	75.0	82.3	4
37018	12	Z	30	44/ 39	21	0	56.1	184.4	192.8	4
41594	00	Z	200	32/ 73	12	1	104.8	28.9	108.7	7
42027	00	Z	100	34/ 75	22	0	139.6	68.9	155.6	5
42027	12	Z	50	34/ 75	7	3	154.7	200.1	253.0	9
42101	00	Z	50	30/ 76	10	0	224.3	-53.5	230.6	8
42101	12	Z	250	30/ 76	14	0	90.5	34.4	96.8	4
42314	00	Z	50	27/ 95	10	0	146.8	69.8	162.5	4
42314	12	Z	150	27/ 95	11	1	138.8	-60.7	151.5	7
42361	00	Z	100	26/ 78	9	1	136.7	28.6	139.6	7
42369	00	Z	100	27/ 81	12	0	103.7	63.3	121.5	4
42379	00	Z	50	27/ 83	21	2	224.7	48.4	229.8	10
42379	12	Z	50	27/ 83	18	0	163.7	105.8	195.0	7
42397	00	Z	200	27/ 88	13	0	96.1	-13.6	97.0	4
42492	00	Z	70	26/ 85	9	2	135.1	174.9	221.0	8
42492	12	Z	150	26/ 85	14	0	90.8	32.3	96.3	4
42647	00	Z	150	23/ 73	15	1	113.4	-63.7	130.0	5
42647	12	Z	100	23/ 73	12	0	71.7	111.1	132.2	5
42667	00	Z	200	23/ 77	17	0	84.3	17.1	86.0	4
42724	00	Z	150	24/ 91	10	0	115.9	9.3	116.3	9
42809	12	Z	200	23/ 88	27	0	83.2	20.1	85.6	5
42875	12	Z	150	21/ 82	11	1	79.5	83.1	115.0	5
42971	00	Z	70	20/ 86	21	0	165.9	-5.0	166.0	6
42971	12	Z	70	20/ 86	16	0	134.5	89.9	161.8	9
43014	12	Z	200	20/ 75	18	2	124.4	15.1	125.3	6
43128	00	Z	50	17/ 78	17	1	171.5	24.8	173.3	6
43128	12	Z	70	17/ 78	18	2	149.9	138.8	204.3	8
43150	00	Z	100	18/ 83	10	0	77.9	106.6	132.1	5
43150	12	Z	200	18/ 83	19	0	89.2	29.5	94.0	5
43185	00	Z	150	16/ 81	23	1	95.8	-34.7	101.9	6
43185	12	Z	70	16/ 81	9	1	185.3	130.0	226.4	8
43192	00	Z	50	15/ 74	11	0	148.2	-11.3	148.6	5
43285	00	Z	30	13/ 75	9	1	180.6	129.3	222.2	7
43285	12	Z	150	13/ 75	18	1	77.9	100.8	127.4	10
43295	00	Z	100	13/ 78	14	1	113.2	115.2	161.5	5
43295	12	Z	150	13/ 78	22	0	88.8	107.8	139.6	5
43311	00	Z	200	11/ 73	11	1	104.7	-18.3	106.3	4
43346	00	Z	100	11/ 80	24	1	110.2	-65.1	128.0	7
43346	12	Z	30	11/ 80	15	3	120.1	251.7	278.9	6
43353	00	Z	100	10/ 76	16	1	116.2	-113.1	162.2	4
43353	12	Z	150	10/ 76	21	0	129.2	28.9	132.4	7
43369	00	Z	150	8/ 73	18	0	100.8	-48.3	111.7	6
43369	12	Z	70	8/ 73	16	0	195.3	37.4	198.8	6
43371	00	Z	100	8/ 77	11	0	150.6	-53.9	160.0	6
43371	12	Z	100	8/ 77	10	0	146.7	52.3	155.8	4
44373	12	Z	200	44/ 104	12	1	35.8	147.3	151.6	5
56739	00	Z	100	25/ 98	28	0	45.8	98.0	108.2	4
59981	00	Z	70	17/ 112	23	0	59.6	144.1	156.0	4
60360	12	Z	200	37/ 8	8	3	65.0	183.5	194.7	7
62306	12	Z	70	31/ 27	9	5	52.8	307.3	311.8	10
68240	12	Z	150	-24/ 26	11	0	112.4	-6.1	112.6	7
70219	00	Z	30	61/-162	29	0	40.8	269.1	272.1	4
96163	00	Z	30	-1/ 100	10	0	203.6	87.4	221.5	9
96237	00	Z	100	-2/ 106	22	0	130.2	72.5	149.0	7

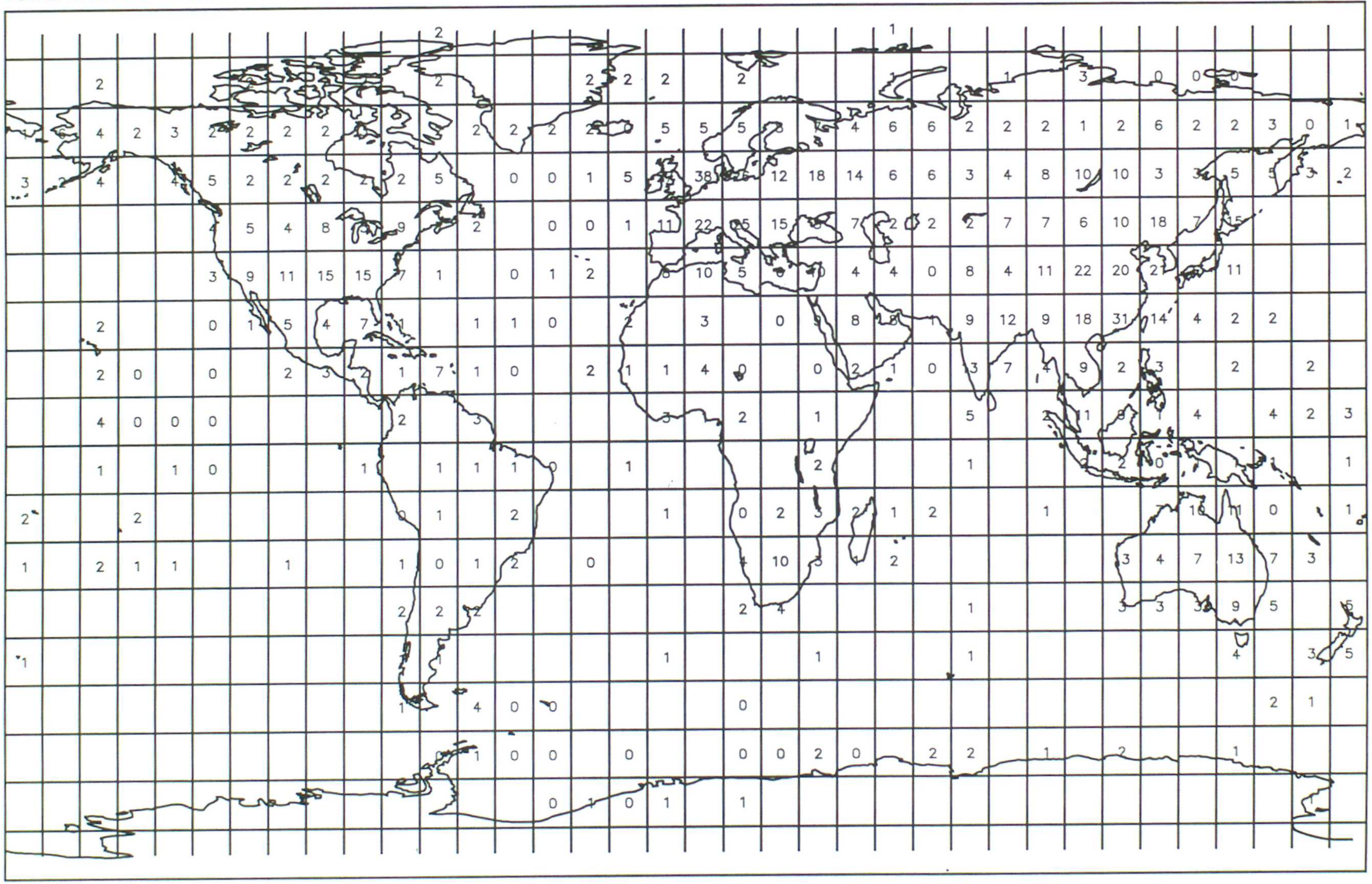
AVAILABILITY – TEMP – 500 HPA GEOPOTENTIAL – MARCH 1995

FIGURE 8

ALL HOURS

10 DEGREE BOX AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS

TOTAL AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS – 1321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3 2 4 4 5 2 2 2 2 2 5 0 0 1 5 38 26 12 18 14 6 6 3 4 8 10 10 3 3 5 5 3 2
4 5 4 8 9 2 0 0 1 11 22 25 15 7 2 2 2 7 7 6 10 18 7 15
3 9 11 15 15 7 1 0 1 2 6 10 5 4 4 0 8 4 11 22 20 21 11
2 0 1 5 4 7 1 1 1 0 2 3 0 8 8 1 9 12 9 18 31 14 4 2 2
2 0 0 2 3 2 1 7 1 0 2 1 1 4 0 0 2 1 0 3 7 4 9 2 3 2 2
4 0 0 0 2 3 3 2 1 5 2 11 8 1 4 4 2 3
1 1 0 1 1 1 1 0 1 2 1 2 0 1
2 2 0 1 2 1 0 2 3 2 1 2 1 7 10 11 0 1 1
1 2 1 1 1 1 0 1 2 0 4 10 3 1 2 3 4 7 13 7 3
2 2 2 2 4 1 3 3 3 9 5 5
1 1 1 1 1 4 3 5
1 4 0 0 0 2 1
1 0 0 0 0 0 2 0 2 2 1 2 1
0 1 0 1 1

TABLE 6

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS
MONITORING CENTRE: BRACKNELL
MONTH:March, 95

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from each unique identifier for radiosonde TEMPs.

Area monitored :90°N - 90°S, 180°W - 180°E.

Standard of comparison :Background field from Bracknell global model.

Observation times :00 UTC and 12 UTC.

Level(s) monitored :Standard levels between 1000.0 - 100.0 hPa

Element monitored :VECTOR WIND in $m\ s^{-1}$

Parameters monitored

:NUM OBS :Number of observations available at level shown during period.

:NUM GROSS :Number of gross errors at level shown during period.

:% REJ :Percentage of observations rejected by quality control at level shown during period.

:UBIAS,VBIAS :Mean difference of observations of U and V components from background values at level shown excluding those with gross errors.

:RMS :Root Mean Square difference of observations from background values at level shown excluding those with gross errors.

:NUM LEVELS :Number of levels satisfying selection criteria.

GROSS ERROR LIMITS :Defined in Appendix I.2

SELECTION CRITERIA :$\geq$ 10 observations and $\geq$ 15 $m\ s^{-1}$ RMS vector wind.

ONLY THE STANDARD LEVEL BETWEEN 1000 - 100 hPa WITH HIGHEST RMS IS SHOWN

WMO IDENT	OBS TIME	ELM	LEV	LAT/LONG	NUM OBS	NUM GROSS	% REJ	UBIAS	VBIAS	RMS	LEVELS
13586	00	V	300	42/ 22	12	0	41	5.8	-11.4	24.6	5
41530	00	V	150	34/ 72	10	1	45	-0.2	20.7	17.9	1
41780	00	V	200	25/ 67	21	0	0	-16.0	-5.2	17.6	2
42369	12	V	200	27/ 81	17	0	11	-16.2	1.2	19.2	2
42397	00	V	250	27/ 88	10	0	30	-21.4	1.5	26.9	2
42397	12	V	200	27/ 88	10	0	30	-17.4	5.5	23.1	3
42875	00	V	250	21/ 82	10	0	10	-3.1	5.3	16.3	1
43014	00	V	250	20/ 75	18	0	11	4.2	2.9	17.5	1
43014	12	V	200	20/ 75	11	0	18	3.1	-1.5	15.7	1
44277	00	V	250	46/ 96	10	0	0	1.9	-4.3	18.3	1
44288	00	V	300	46/ 103	12	0	8	3.0	-5.5	16.1	1
55591	12	V	300	30/ 91	19	0	15	-0.7	3.8	15.8	1
56691	00	V	100	27/ 104	22	1	26	10.0	1.1	18.2	2

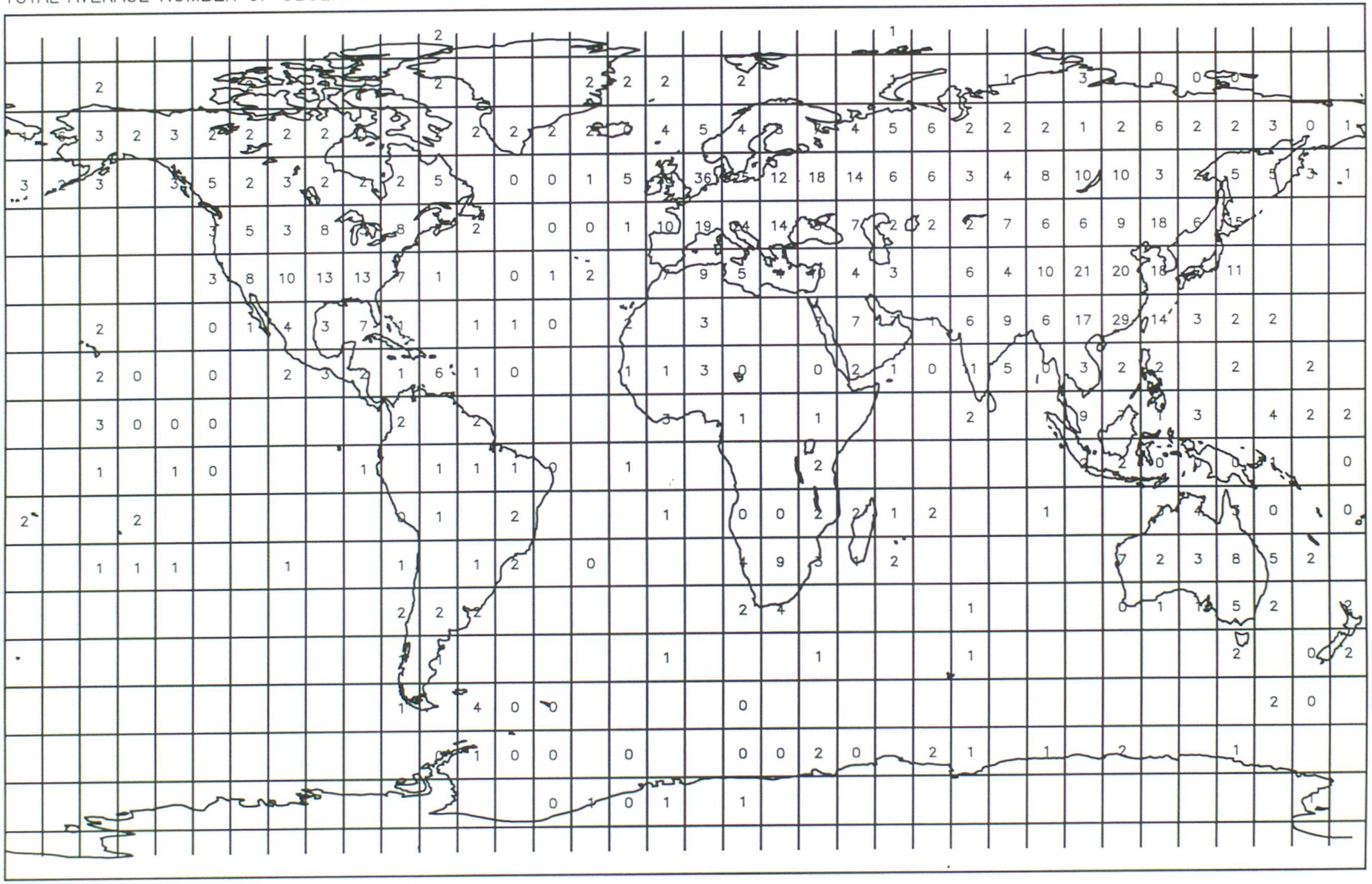
AVAILABILITY – TEMP/PILOT – 300 HPA WIND – MARCH 1995

FIGURE 9

ALL HOURS

10 DEGREE BOX AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS

TOTAL AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS – 1153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6 3 2 3 2 2 2 2 2 2 2 2 0 4 5 4 8 7 4 5 6 2 2 2 1 2 6 2 2 3 0 1
3 2 3 3 5 2 3 2 2 2 5 0 0 1 5 13 36 5 12 18 14 6 6 3 4 8 10 10 3 2 5 5 3 1
3 5 3 8 4 8 2 0 0 1 10 19 24 14 8 7 2 2 2 7 6 6 9 18 6 15
3 8 10 13 13 7 1 0 1 2 9 5 0 4 3 6 4 10 21 20 18 11
2 0 1 4 3 7 1 1 1 0 2 3 7 7 1 6 9 6 17 29 14 3 2 2
2 0 0 2 3 2 1 6 1 0 1 1 3 0 0 2 1 0 1 5 0 3 2 2 2 2
3 0 0 0 2 2 3 1 1 2 9 1 3 4 2 2
1 1 0 1 1 1 1 0 1 2 2 2 0 0 0
2 2 0 1 2 1 0 0 2 2 1 2 1 4 4 0 0 0
1 1 1 1 1 1 2 0 4 9 3 1 2 7 2 3 8 5 2
2 2 2 2 4 1 0 1 1 5 2 2
1 1 1 1 2 0 2
1 4 0 0 0 2 0
0 1 0 0 0 0 0 2 0 2 1 1 2 1
0 1 0 1 1 1

TABLE 7

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS
MONITORING CENTRE: BRACKNELL
MONTH:March, 95

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from each unique identifier for radiosonde TEMPs.

Area monitored :90°N - 90°S, 180°W - 180°E.

Standard of comparison :Background field from Bracknell global model.

Observation times :00 UTC and 12 UTC.

Level(s) monitored :Standard levels between 500.0 - 150.0 hPa

Element monitored :WIND DIRECTION in degrees

Parameters monitored

:NUM OBS :Average number of observations at all levels.

:BIAS :Mean difference of observations from background values from all levels.

:MAX SPREAD :(For observation - background values) Maximum absolute difference of SD at any level from SD at all levels

:SD :SD of difference of observations from background values at all levels.

SELECTION CRITERIA :NUM OBS ≥ 5, and
ABSOLUTE BIAS ≥ 10°, with
SD < 30°, and
MAX SPREAD < 10°

WMO IDENT	OBS TIME	ELM	LAT/LONG	NUM OBS	BIAS	MAX SPREAD	SD
24641	00	DD	64/ 122	26	11.0	4.4	9.6
24641	12	DD	64/ 122	26	10.4	4.7	9.1
42339	12	DD	26/ 73	19	17.3	5.6	13.0
42397	12	DD	27/ 88	15	-11.0	4.6	13.1
42724	12	DD	24/ 91	10	-10.8	9.3	9.3
48455	00	DD	14/ 101	9	-10.2	9.0	25.2
53772	00	DD	38/ 113	28	-12.4	7.5	11.5
53772	12	DD	38/ 113	27	-10.2	5.7	9.4
56691	00	DD	27/ 104	26	-11.3	4.5	12.7
58606	12	DD	29/ 116	26	-11.9	1.8	7.3
59981	00	DD	17/ 112	23	10.0	3.5	15.3
60571	12	DD	32/ -2	20	11.0	4.8	15.7
60630	12	DD	27/ 2	12	11.5	6.7	11.8

MONITORING OF SATELLITE WINDS

MONITORING CENTRE: BRACKNELL

MONTH:March, 95

Monitoring procedures

Period	:One calendar month.
Data monitored	:Reports from GOES, METEOSAT, GMS, INSAT.
Standard of comparison	:Background field from Bracknell global model.
Selection Criteria	:number of observations > 10.
Data Extracted	:Layer:701 - 1000 hPa 401 - 700 hPa 101 - 400 hPa

:Mean wind

:Mean observation minus background vector wind differences

:Mean observation minus background speed differences

:RMS of observation minus background vector differences

AVERAGE DAILY NUMBER OF SATOB OBSERVATIONS BETWEEN 701 AND 1000 HPA FIGURE 10
MARCH 1995

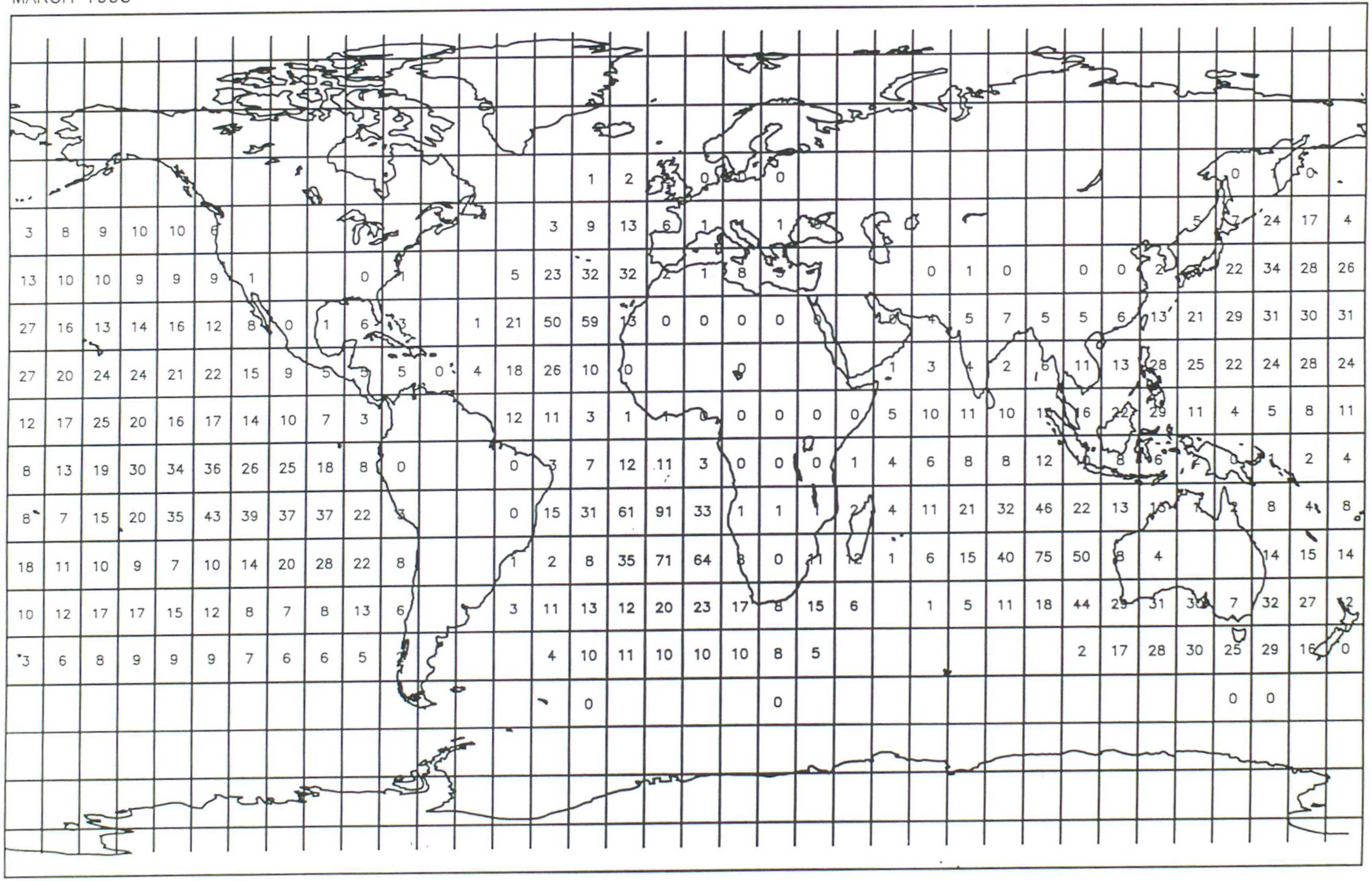
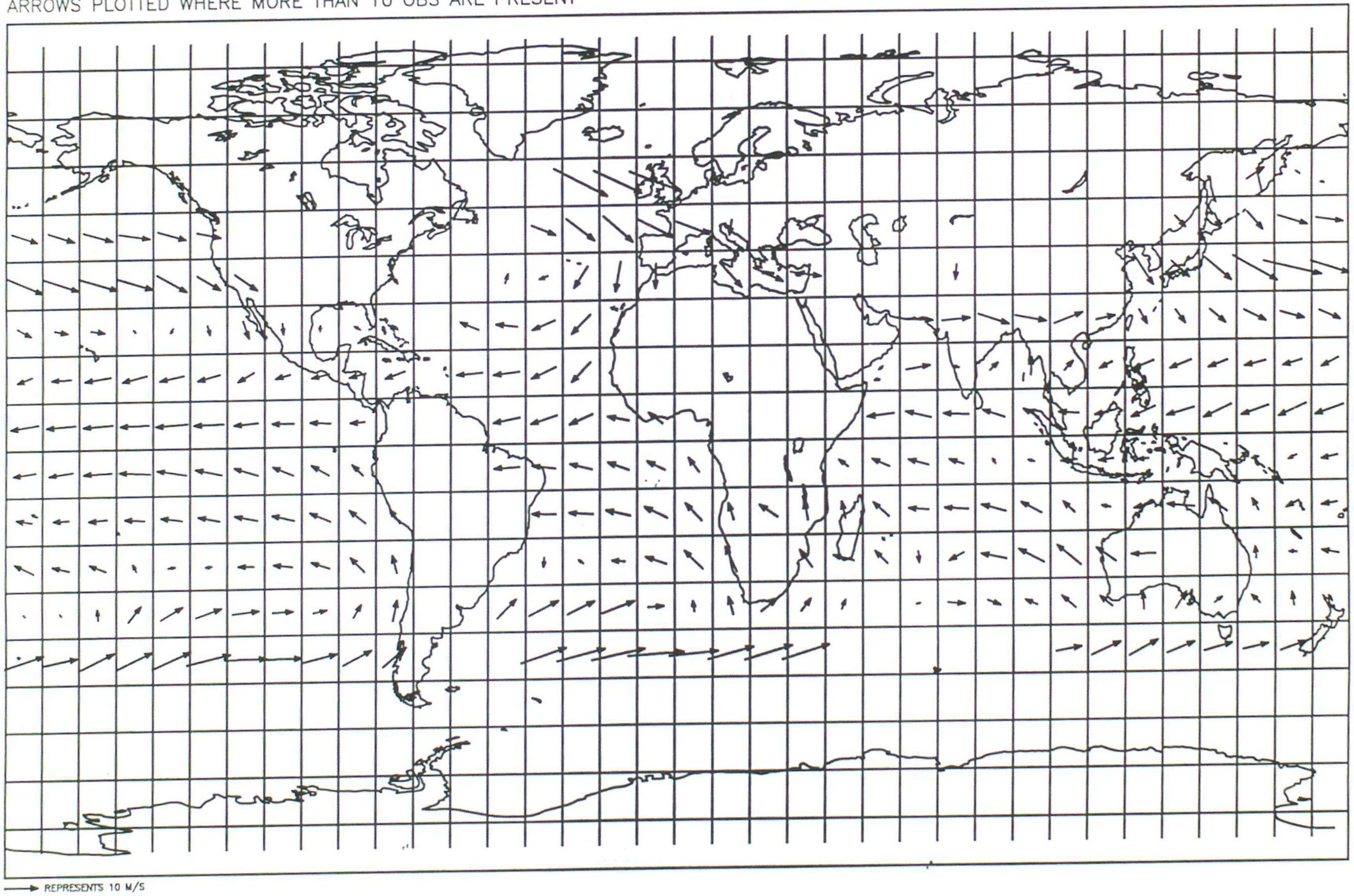

1 2 0 0 0 0
3 8 9 10 10 6 3 9 13 6 1 1 5 7 24 17 4
13 10 10 9 9 9 1 0 1 5 23 32 32 2 1 8 3 0 1 0 0 0 2 22 34 28 26
27 16 13 14 16 12 8 0 1 6 3 1 21 50 59 13 0 0 0 0 0 0 4 5 7 5 5 6 13 21 29 31 30 31
27 20 24 24 21 22 15 9 5 5 5 0 4 18 26 10 0 0 1 3 4 2 6 11 13 28 25 22 24 28 24
12 17 25 20 16 17 14 10 7 3 12 11 3 1 1 0 0 0 0 0 5 10 11 10 15 16 22 29 11 4 5 8 11
8 13 19 30 34 36 26 25 18 8 0 0 3 7 12 11 3 0 0 0 1 4 6 8 8 12 10 8 6 7 0 1 2 4
8 7 15 20 35 43 39 37 37 22 3 0 15 31 61 91 33 1 1 1 2 4 11 21 32 46 22 13 15 1 2 8 4 8
18 11 10 9 7 10 14 20 28 22 8 1 2 8 35 71 64 8 0 11 12 1 6 15 40 75 50 8 4 14 15 14
10 12 17 17 15 12 8 7 8 13 6 3 11 13 12 20 23 17 8 15 6 1 5 11 18 44 29 31 30 7 32 27 12
3 6 8 9 9 9 7 6 6 5 2 4 10 11 10 10 10 8 5 2 17 28 30 25 29 16 0
0 0 0 0

FIGURE 11

SATOB VECTOR MEAN WINDS BETWEEN 701–1000 HPA
MARCH 1995
ALL OBSERVATIONS
ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT


REPRESENTS 10 M/S

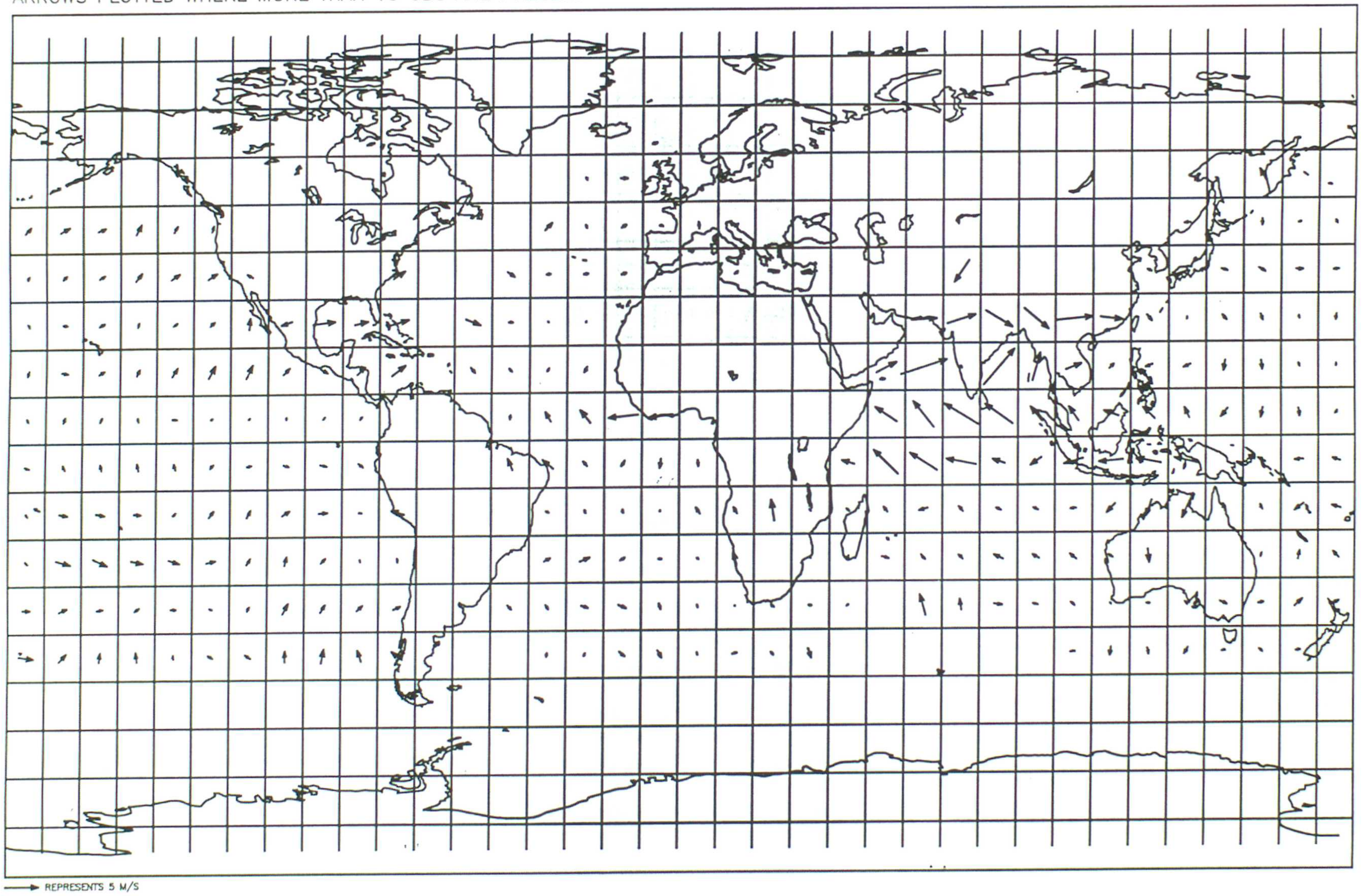
SATOB O−B VECTOR WIND DIFFERENCES BETWEEN 701−1000 HPA

MARCH 1995

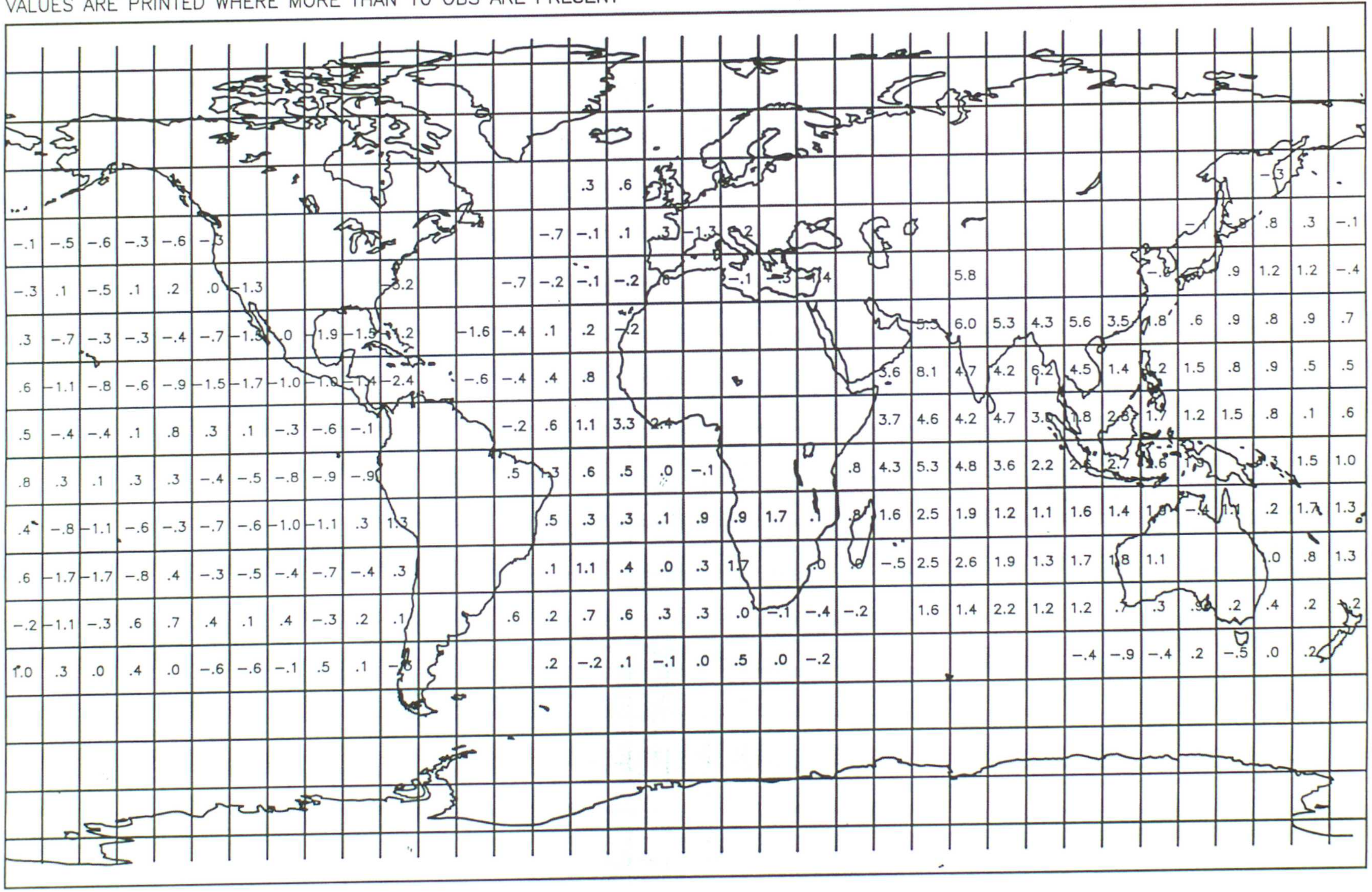
ALL OBSERVATIONS

ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT

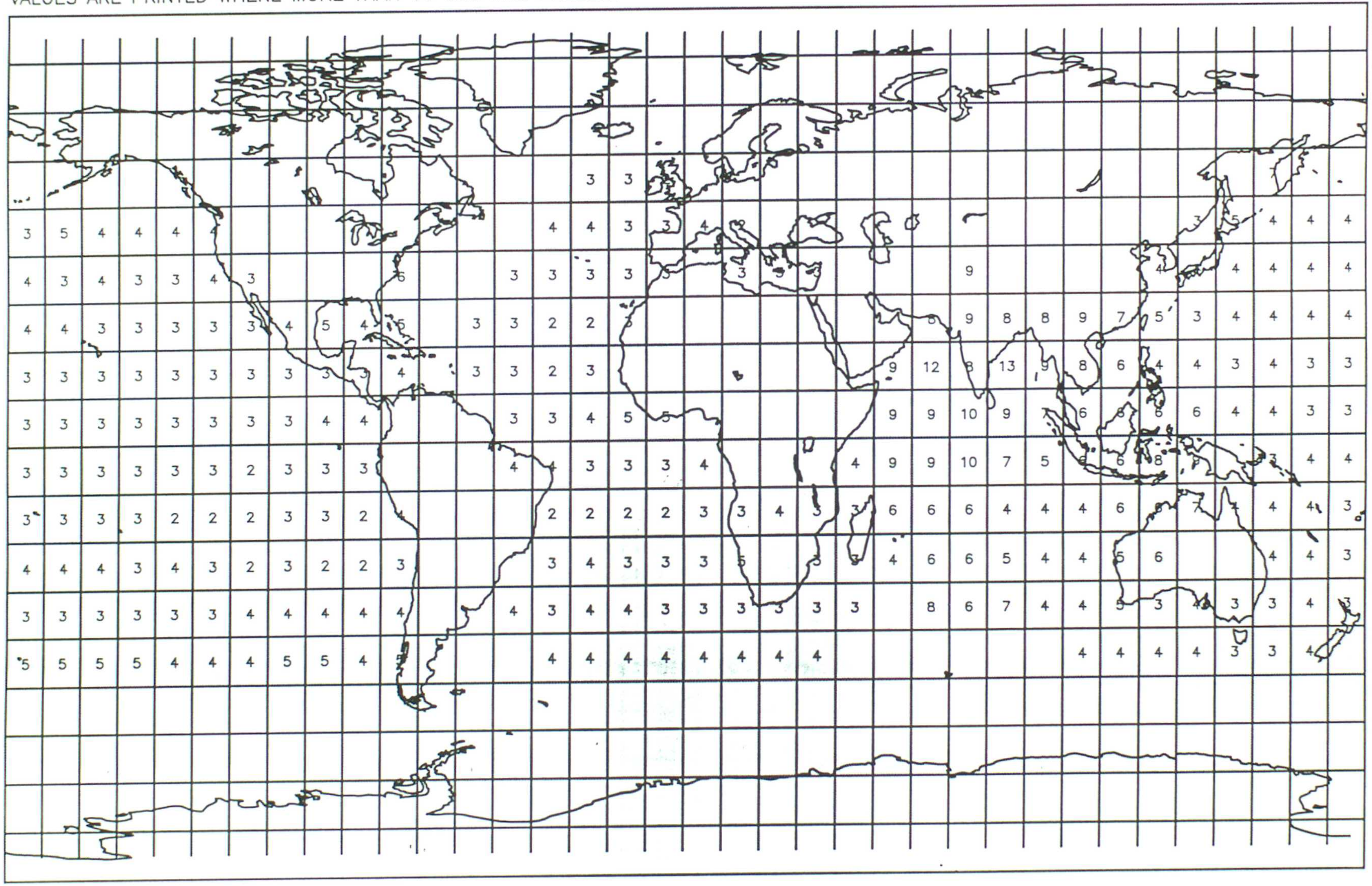
FIGURE 12



SATOBS : MEAN O–B SPEED DIFFERENCES (M/S) BETWEEN 701 AND 1000 HPA FIGURE 13
MARCH 1995
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT

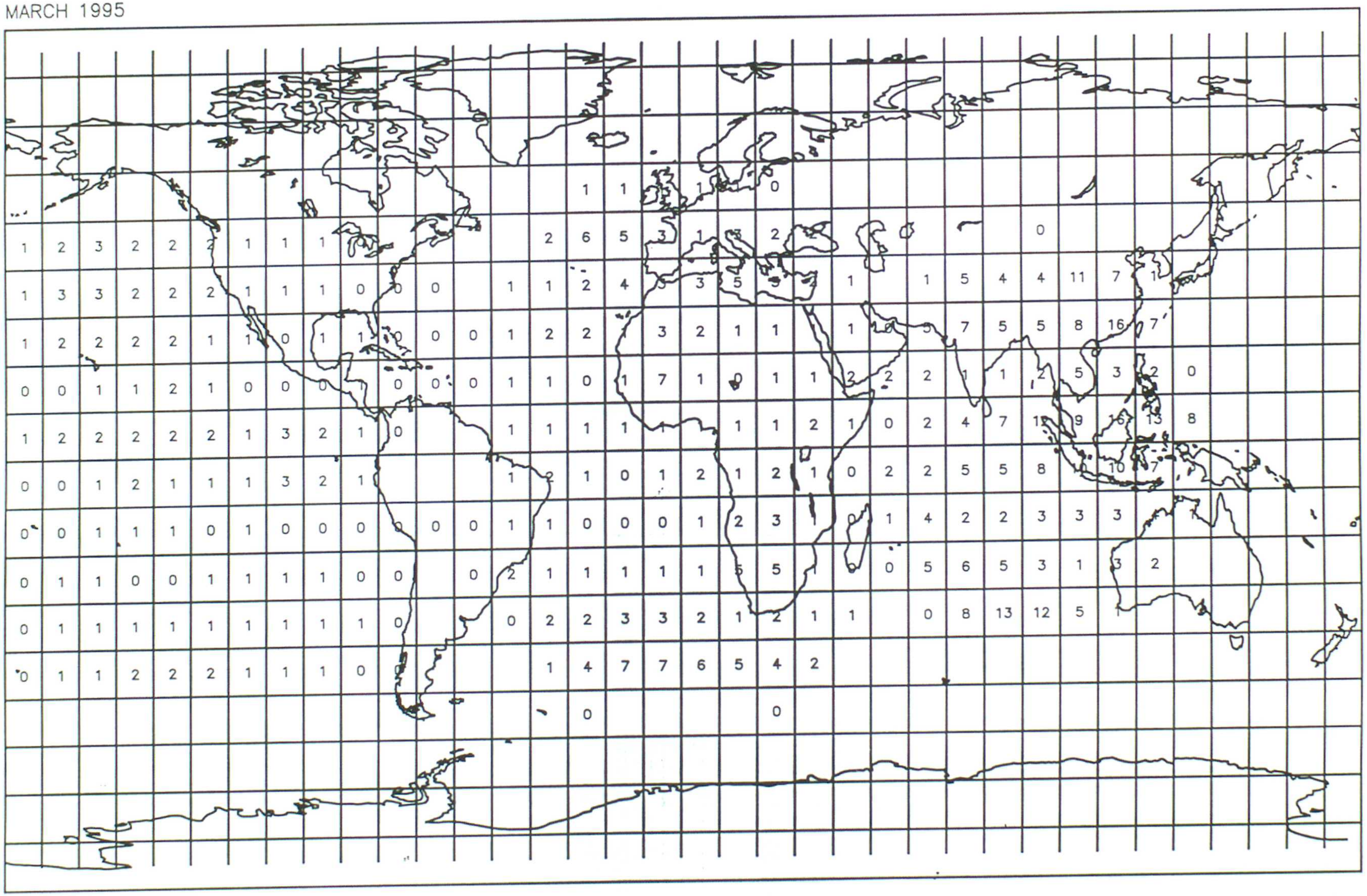

.3 .6 -.3
-.1 -.5 -.6 -.3 -.6 -.3 -.7 -.1 .1 .3 -1.3 .2 -.1 -.8 .8 .3 -.1
-.3 .1 -.5 .1 .2 .0 -1.3 -3.2 -.7 -.2 -.1 -.2 .6 -.1 -.3 -.4 5.8 -.6 .9 1.2 1.2 -.4
.3 -.7 -.3 -.3 -.4 -.7 -1.5 .0 -1.9 -1.5 -1.2 -1.6 -.4 .1 .2 -.2 5.5 6.0 5.3 4.3 5.6 3.5 1.8 .6 .9 .8 .9 .7
.6 -1.1 -.8 -.6 -.9 -1.5 -1.7 -1.0 -1.0 -1.4 -2.4 -.6 -.4 .4 .8 3.6 8.1 4.7 4.2 6.2 4.5 1.4 .2 1.5 .8 .9 .5 .5
.5 -.4 -.4 .1 .8 .3 .1 -.3 -.6 -.1 -.2 .6 1.1 3.3 2.4 3.7 4.6 4.2 4.7 3.0 1.8 2.8 1.7 1.2 1.5 .8 .1 .6
.8 .3 .1 .3 .3 -.4 -.5 -.8 -.9 -.9 .5 1.3 .6 .5 .0 -.1 .8 4.3 5.3 4.8 3.6 2.2 2.6 2.7 1.6 1.9 .3 1.5 1.0
.4 -.8 -1.1 -.6 -.3 -.7 -.6 -1.0 -1.1 .3 1.3 .5 .3 .3 .1 .9 .9 1.7 .1 .8 1.6 2.5 1.9 1.2 1.1 1.6 1.4 1.9 -.4 1.1 .2 1.7 1.3
.6 -1.7 -1.7 -.8 .4 -.3 -.5 -.4 -.7 -.4 .3 .1 1.1 .4 .0 .3 1.7 .0 .0 -.5 2.5 2.6 1.9 1.3 1.7 1.8 1.1 .0 .8 1.3
-.2 -1.1 -.3 .6 .7 .4 .1 .4 -.3 .2 .1 .6 .2 .7 .6 .3 .3 .0 -.1 -.4 -.2 1.6 1.4 2.2 1.2 1.2 .7 .3 .9 .2 .4 .2 -.2
1.0 .3 .0 .4 .0 -.6 -.6 -.1 .5 .1 -.8 .2 -.2 .1 -.1 .0 .5 .0 -.2 -.4 -.9 -.4 .2 -.5 .0 .2

SATOBS : RMS O–B VECTOR DIFFERENCES (M/S) BETWEEN 701 AND 1000 HPA FIGURE 14
MARCH 1995
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT



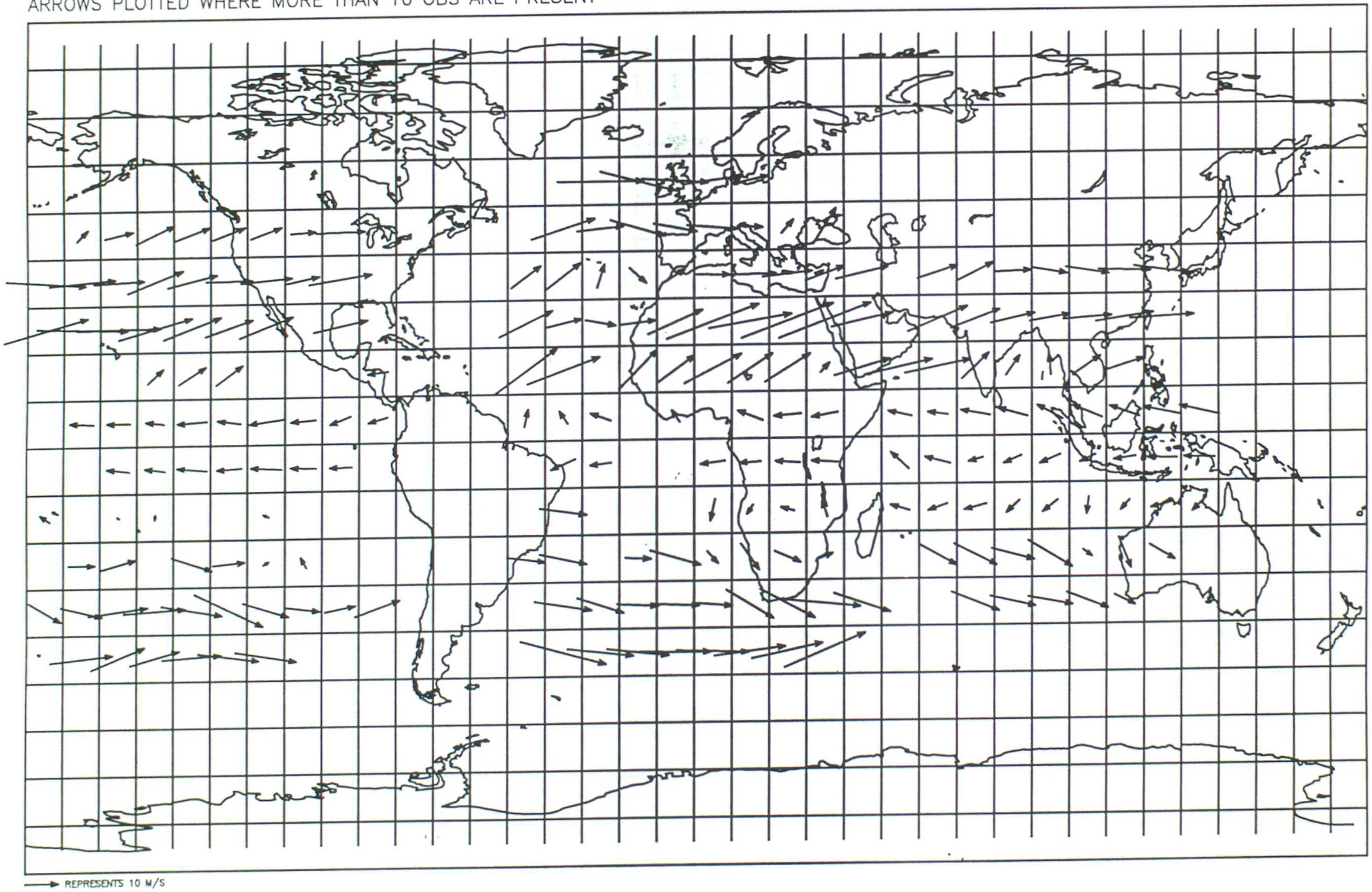
AVERAGE DAILY NUMBER OF SATOB OBSERVATIONS BETWEEN 401 AND 700 HPA FIGURE 15

MARCH 1995


1 1 1 0
1 2 3 2 2 2 1 1 1 2 6 5 3 1 3 2 2 0
1 3 3 2 2 2 1 1 1 0 0 0 1 1 2 4 3 3 5 5 2 1 1 5 4 4 11 7 1
1 2 2 2 2 1 1 0 1 1 0 0 0 1 2 2 1 3 2 1 1 1 0 5 7 5 5 8 16 7
0 0 1 1 2 1 0 0 0 1 0 0 0 1 1 0 1 7 1 0 1 1 2 2 2 1 1 2 5 3 2 0
1 2 2 2 2 2 1 3 2 1 0 1 1 1 1 1 1 1 2 1 0 2 4 7 9 16 13 8
0 0 1 2 1 1 1 3 2 1 1 2 1 0 1 2 1 2 1 0 2 2 5 5 8 10 7
0 0 1 1 1 0 1 0 0 0 0 0 0 1 1 0 0 0 1 2 3 1 0 1 4 2 2 3 3 3
0 1 1 0 0 1 1 1 1 0 0 0 2 1 1 1 1 1 5 5 1 0 0 5 6 5 3 1 3 2
0 1 1 1 1 1 1 1 1 1 0 0 2 2 3 3 2 1 2 1 1 0 8 13 12 5 1
0 1 1 2 2 2 1 1 1 0 0 1 4 7 7 6 5 4 2
0 0

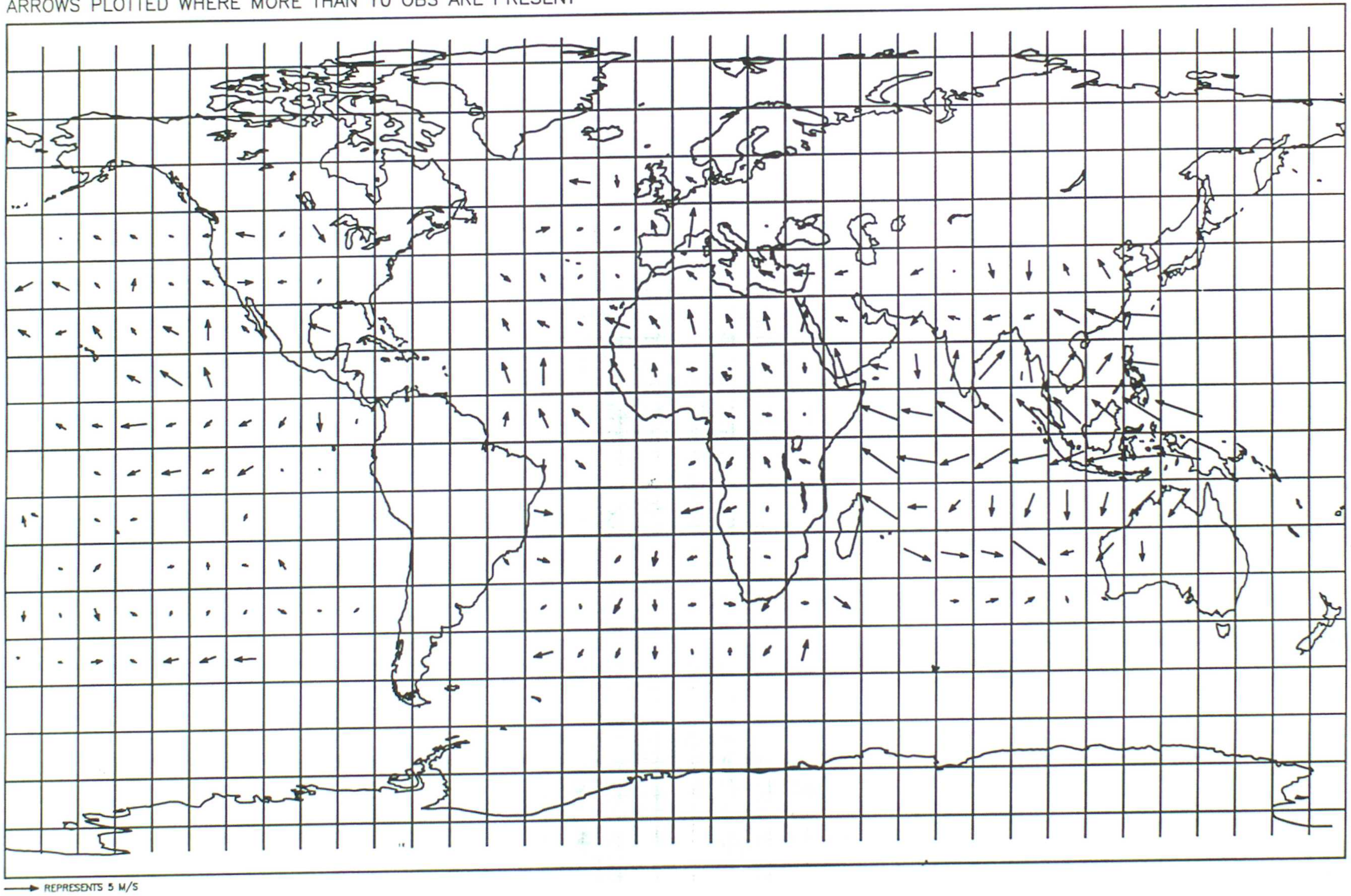
SATOB VECTOR MEAN WINDS BETWEEN 401–700 HPA
MARCH 1995
ALL OBSERVATIONS
ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT

FIGURE 16


REPRESENTS 10 M/S

SATOB O-B VECTOR WIND DIFFERENCES BETWEEN 401-700 HPA
MARCH 1995
ALL OBSERVATIONS
ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT

FIGURE 17

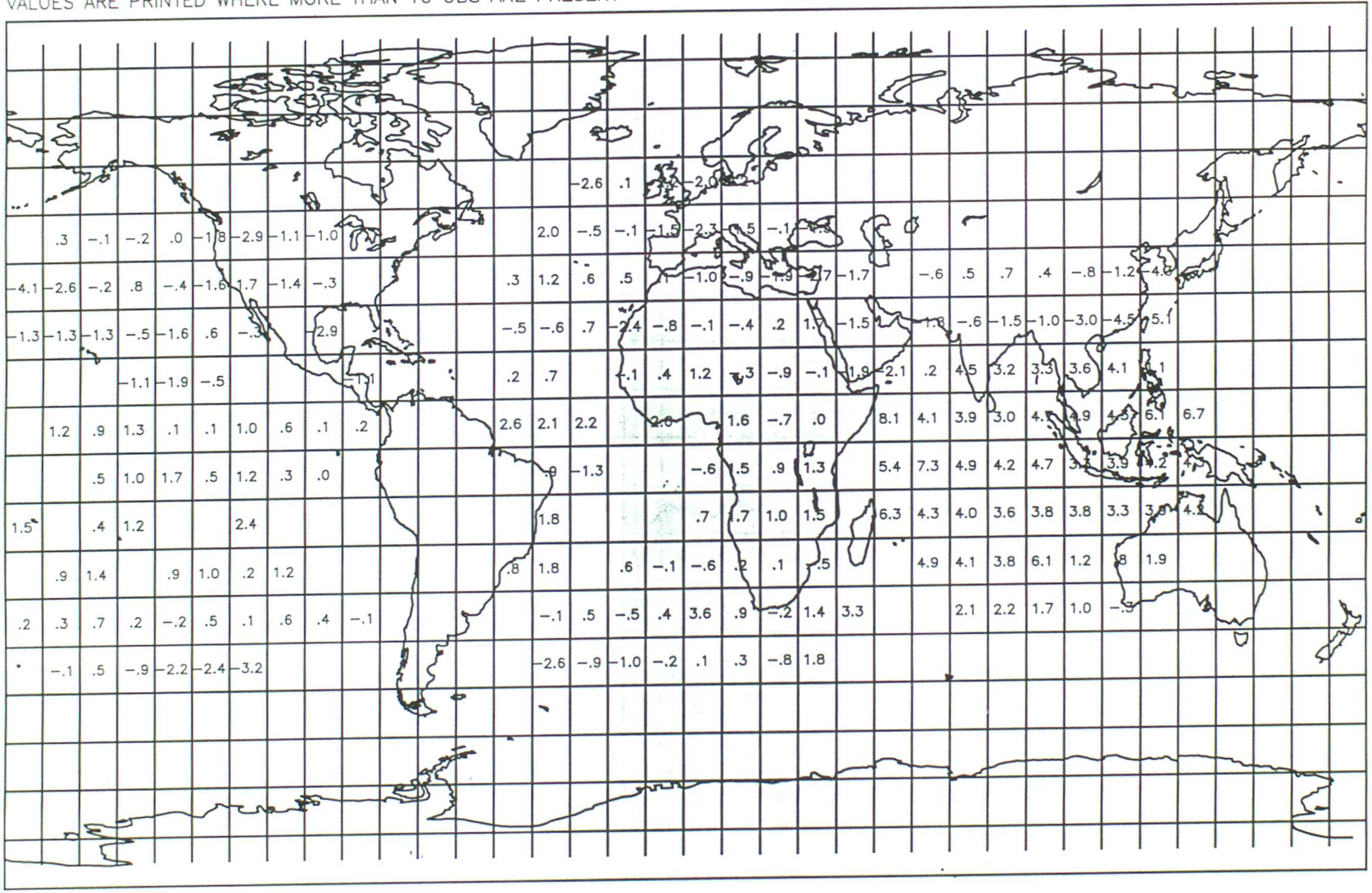

REPRESENTS 5 M/S

SATOBS : MEAN O–B SPEED DIFFERENCES (M/S) BETWEEN 401 AND 700 HPA FIGURE 18

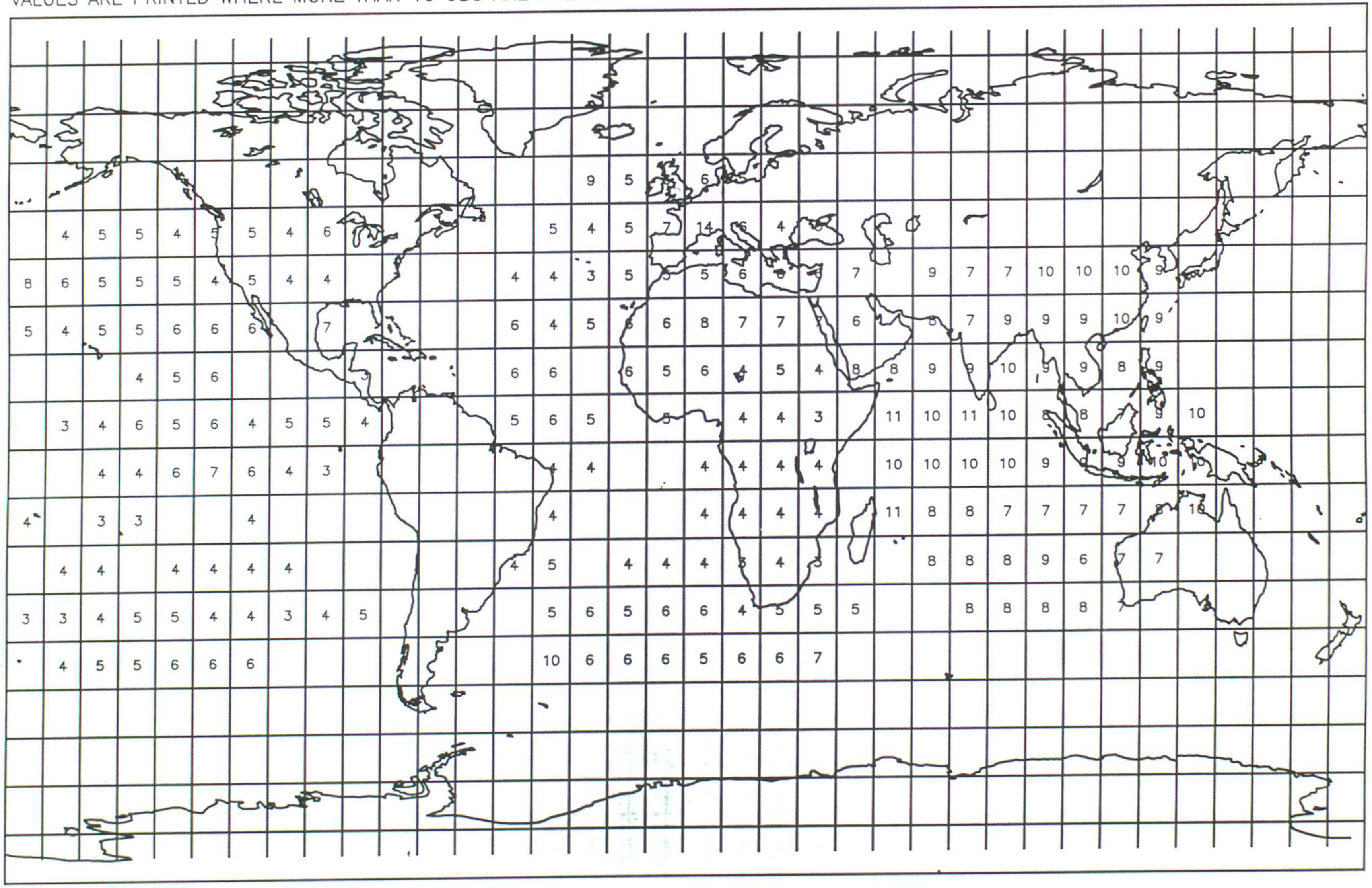
MARCH 1995

USING ALL OBSERVATIONS

VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT


-2.6 .1 -2.0
.3 -.1 -.2 .0 -1.8 -2.9 -1.1 -1.0 2.0 -.5 -.1 -1.5 -2.3 -1.5 -.1
-4.1 -2.6 -.2 .8 -.4 -1.6 1.7 -1.4 -.3 .3 1.2 .6 .5 .1 -1.0 -.9 -1.9 2.7 -1.7 -.6 .5 .7 .4 -.8 -1.2 -4.0
-1.3 -1.3 -1.3 -.5 -1.6 .6 -.3 -2.9 -.5 -.6 .7 -2.4 -.8 -.1 -.4 .2 1.7 -1.5 -1.8 -.6 -1.5 -1.0 -3.0 -4.5 5.1
-1.1 -1.9 -.5 -1.1 .2 .7 -.1 .4 1.2 -.3 -.9 -.1 1.9 -2.1 .2 4.5 3.2 3.3 3.6 4.1 1.1
1.2 .9 1.3 .1 .1 1.0 .6 .1 .2 2.6 2.1 2.2 2.6 1.6 -.7 .0 8.1 4.1 3.9 3.0 4.5 4.9 4.5 6.1 6.7
.5 1.0 1.7 .5 1.2 .3 .0 .9 -1.3 -.6 .5 .9 1.3 5.4 7.3 4.9 4.2 4.7 3.9 4.2
1.5 .4 1.2 2.4 1.8 .7 .7 1.0 1.5 6.3 4.3 4.0 3.6 3.8 3.8 3.3 3.8 4.2
.9 1.4 .9 1.0 .2 1.2 .8 1.8 .6 -.1 -.6 .2 .1 .5 4.9 4.1 3.8 6.1 1.2 .8 1.9
.2 .3 .7 .2 -.2 .5 .1 .6 .4 -.1 -.1 .5 -.5 .4 3.6 .9 -.2 1.4 3.3 2.1 2.2 1.7 1.0 -.5
-.1 .5 -.9 -2.2 -2.4 -3.2 -2.6 -.9 -1.0 -.2 .1 .3 -.8 1.8

SATOBS : RMS O−B VECTOR DIFFERENCES (M/S) BETWEEN 401 AND 700 HPA FIGURE 19
MARCH 1995
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT


9 5 6
4 5 5 4 5 5 4 6 5 4 5 7 14 6 4
8 6 5 5 5 4 5 4 4 4 4 3 5 5 5 6 6 6 7 9 7 7 10 10 10 9
5 4 5 5 6 6 6 7 6 4 5 6 6 8 7 7 7 6 8 7 9 9 9 10 9
4 5 6 6 6 6 5 6 4 5 4 8 8 9 9 10 9 9 8 9
3 4 6 5 6 4 5 5 4 5 6 5 5 4 4 3 11 10 11 10 8 8 7 9 10
4 4 6 7 6 4 3 4 4 4 4 4 4 10 10 10 10 9 9 10 10
4 3 3 4 4 4 4 4 4 11 8 8 7 7 7 7 8 10
4 4 4 4 4 4 4 5 4 4 4 3 4 3 8 8 8 9 6 7 7
3 3 4 5 5 4 4 3 4 5 5 6 5 6 6 4 5 5 5 8 8 8 8 7
4 5 5 6 6 6 10 6 6 6 5 6 6 7

AVERAGE DAILY NUMBER OF SATOB OBSERVATIONS BETWEEN 101 AND 400 HPA FIGURE 20
MARCH 1995

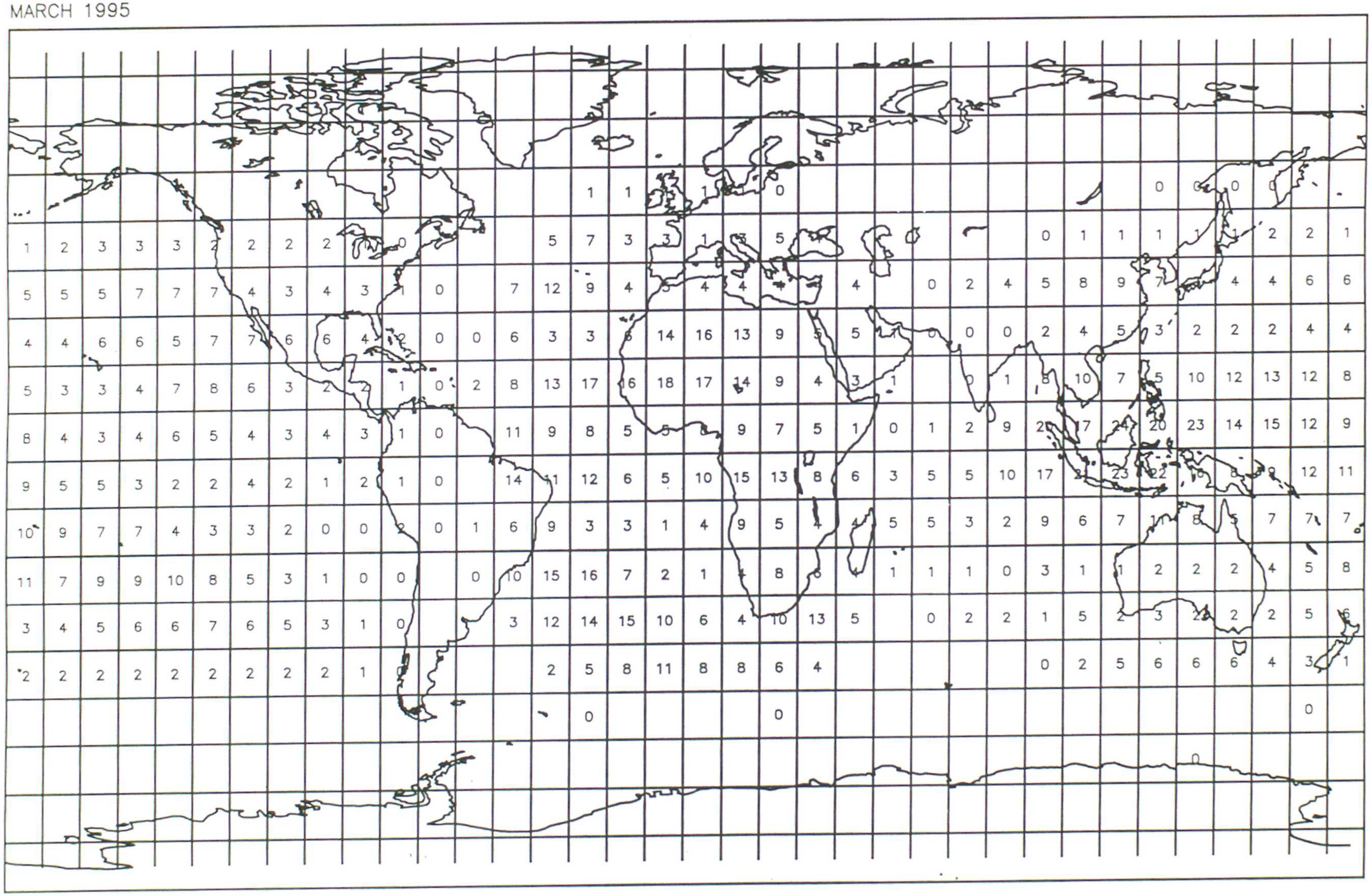
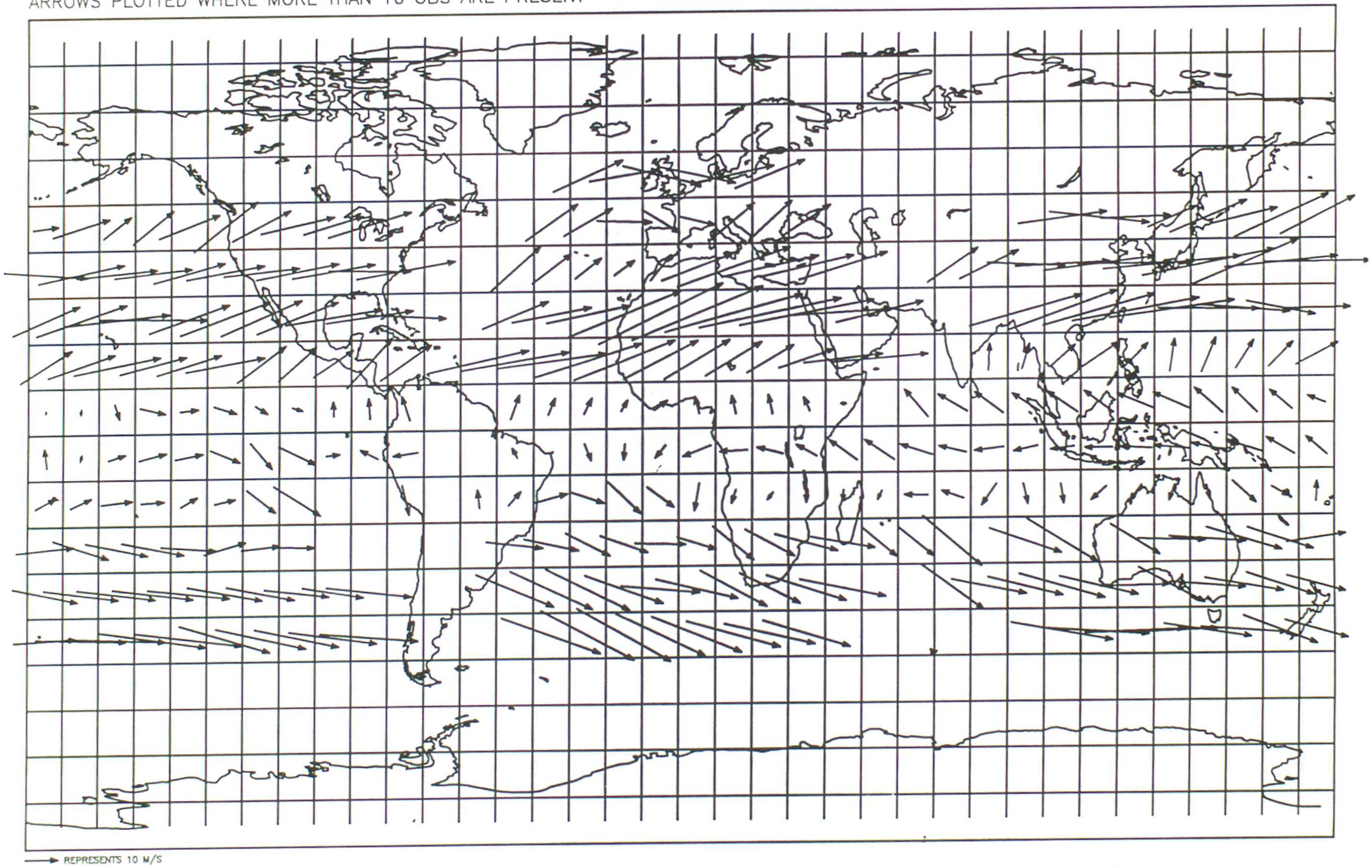

1 1 1 0 0 0 0 0
1 2 3 3 3 2 2 2 2 0 5 7 3 3 1 3 5 0 1 1 1 1 1 2 2 1
5 5 5 7 7 7 4 3 4 3 1 0 7 12 9 4 5 4 4 4 4 0 2 4 5 8 9 7 4 4 6 6
4 4 6 6 5 7 7 6 6 4 2 0 0 6 3 3 6 14 16 13 9 5 5 1 0 0 0 2 4 5 3 2 2 2 4 4
5 3 3 4 7 8 6 3 2 2 1 0 2 8 13 17 16 18 17 14 9 4 3 1 0 1 8 10 7 5 10 12 13 12 8
8 4 3 4 6 5 4 3 4 3 1 0 11 9 8 5 5 8 9 7 5 1 0 1 2 9 2 17 24 20 23 14 15 12 9
9 5 5 3 2 2 4 2 1 2 1 0 14 11 12 6 5 10 15 13 8 6 3 5 5 10 17 2 23 22 16 8 9 12 11
10 9 7 7 4 3 3 2 0 0 2 0 1 6 9 3 3 1 4 9 5 4 4 5 5 3 2 9 6 7 11 8 5 7 7 7
11 7 9 9 10 8 5 3 1 0 0 0 10 15 16 7 2 1 4 8 6 4 1 1 1 0 3 1 1 2 2 2 4 5 8
3 4 5 6 6 7 6 5 3 1 0 3 12 14 15 10 6 4 10 13 5 0 2 2 1 5 2 3 2 2 2 5 6
2 2 2 2 2 2 2 2 2 1 0 2 5 8 11 8 8 6 4 0 2 5 6 6 6 4 3 1
0 0 0
0

FIGURE 21

SATOB VECTOR MEAN WINDS BETWEEN 101–400 HPA
MARCH 1995
ALL OBSERVATIONS
ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT


REPRESENTS 10 M/S

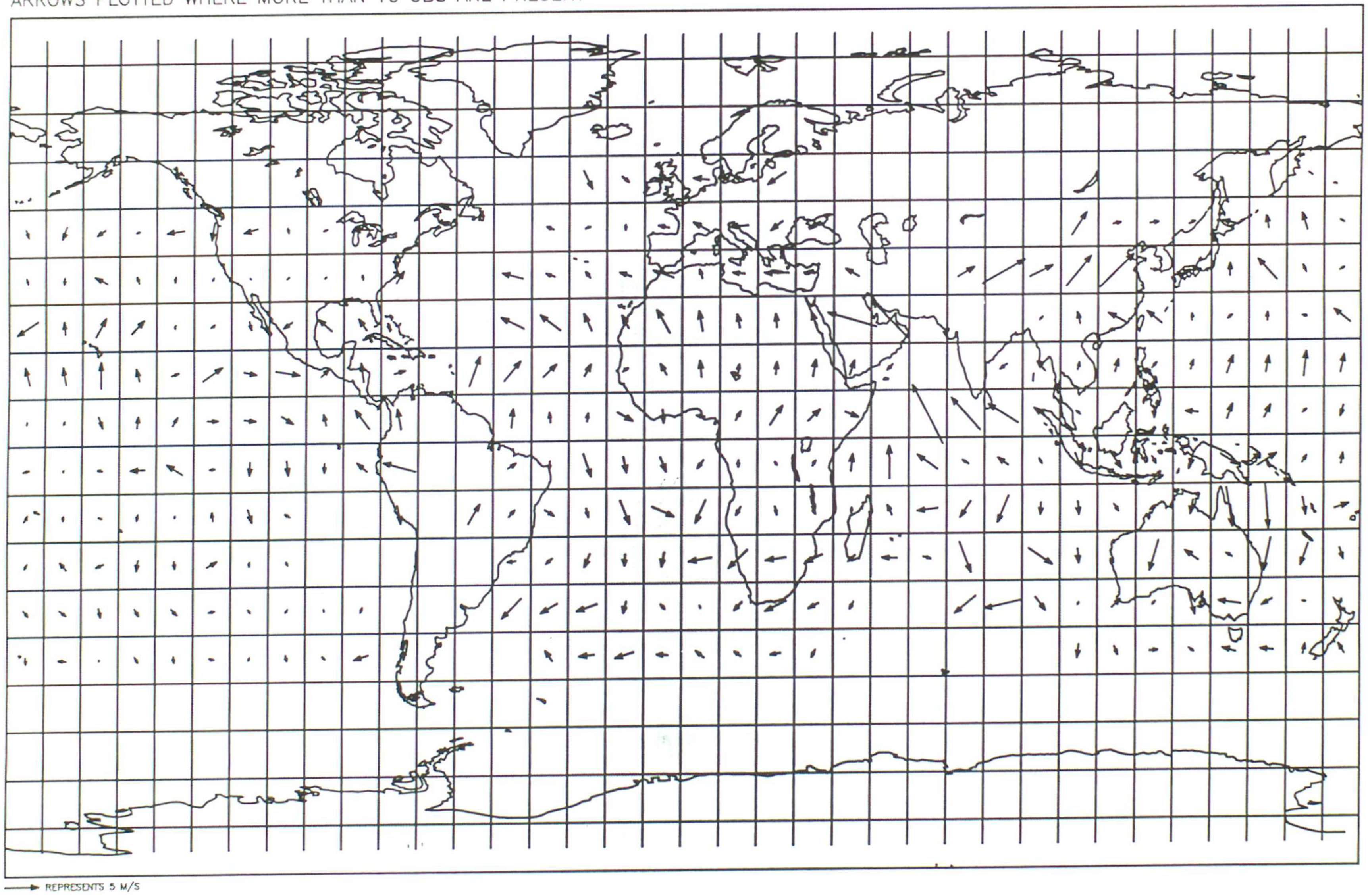
SATOB O-B VECTOR WIND DIFFERENCES BETWEEN 101-400 HPA

MARCH 1995

ALL OBSERVATIONS

ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT

FIGURE 22

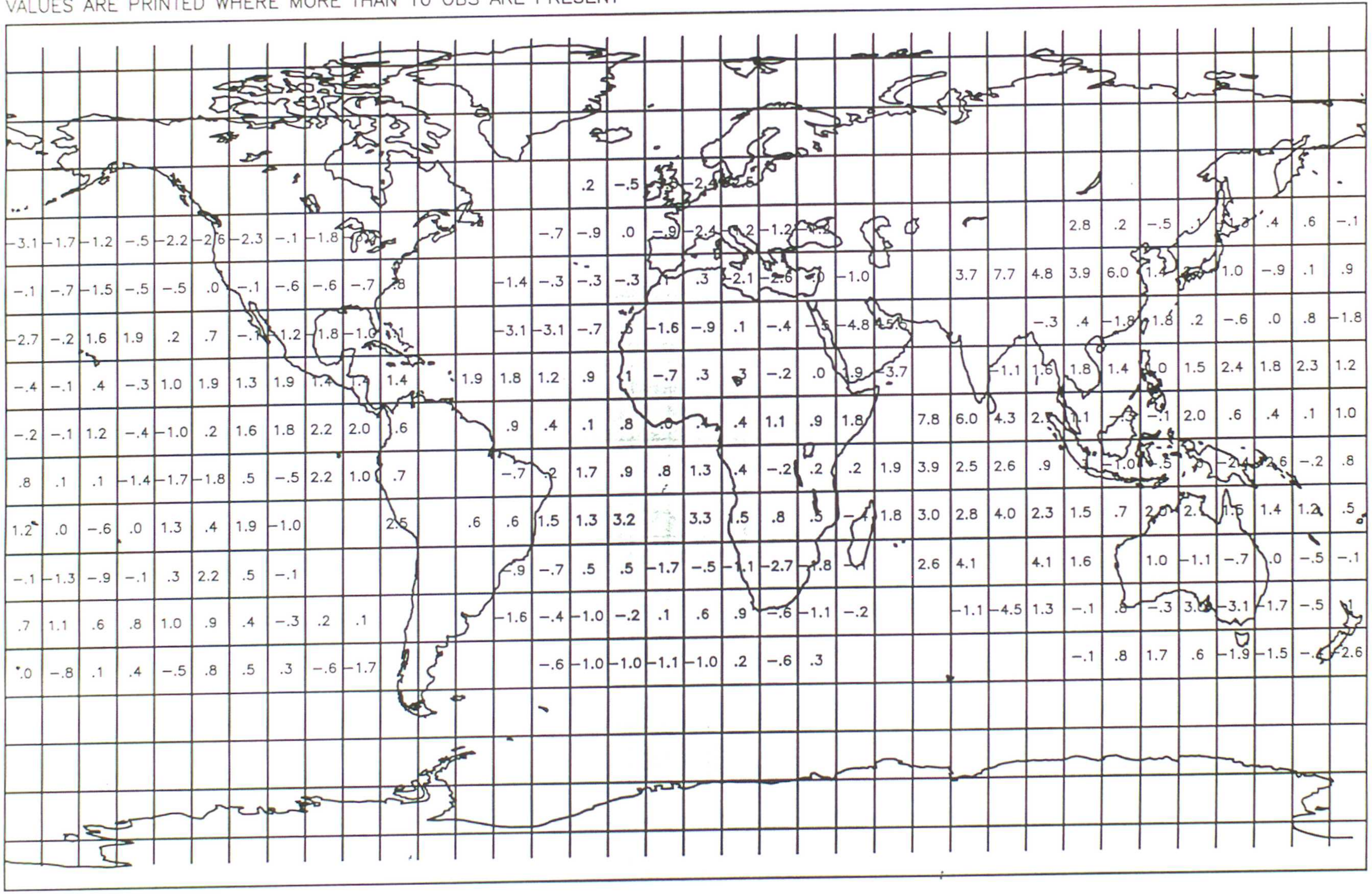

REPRESENTS 5 M/S

SATOBS : MEAN O–B SPEED DIFFERENCES (M/S) BETWEEN 101 AND 400 HPA FIGURE 23

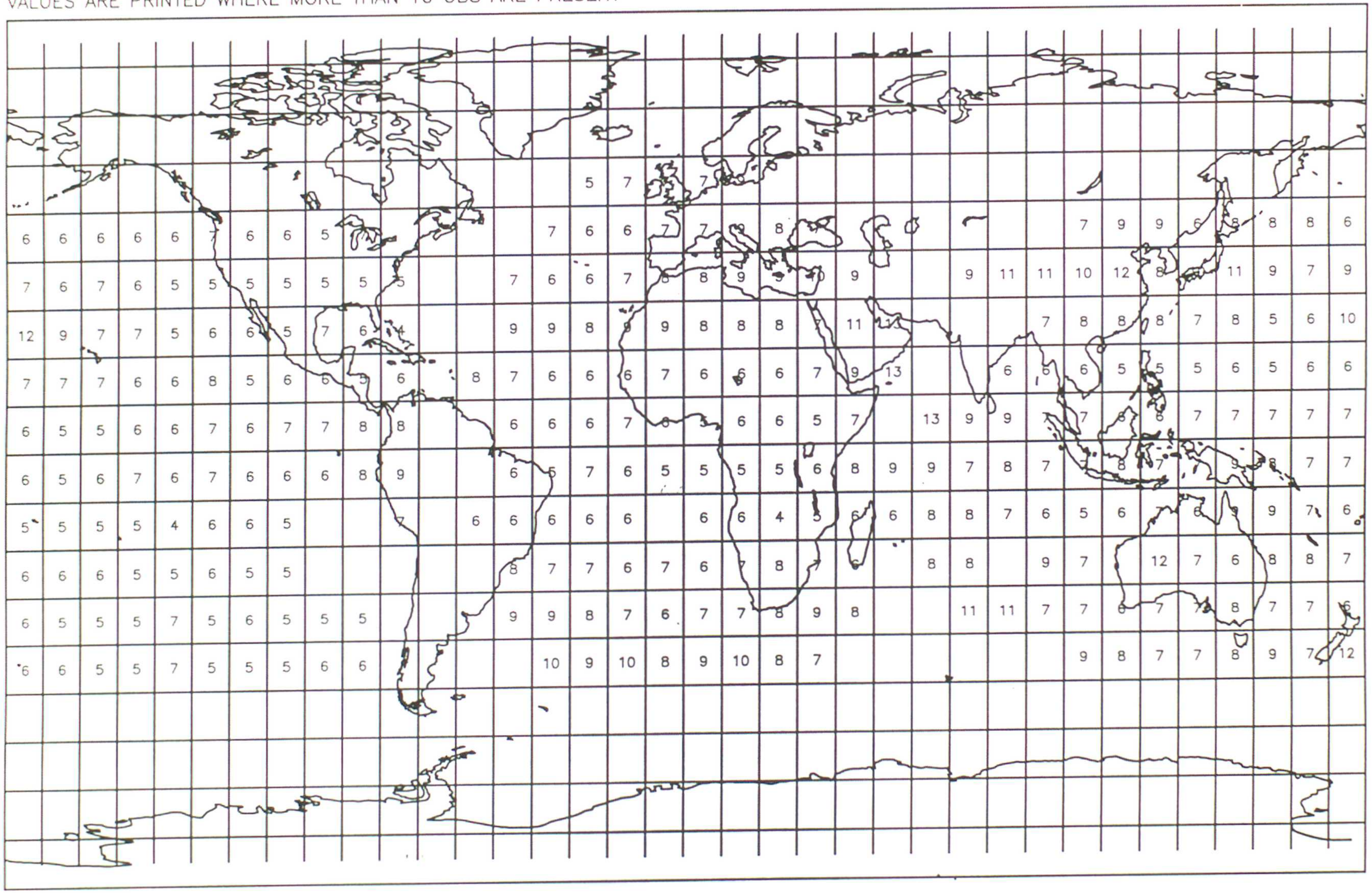
MARCH 1995

USING ALL OBSERVATIONS

VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT


.2 −.5 −2.4
−3.1 −1.7 −1.2 −.5 −2.2 −2.6 −2.3 −.1 −1.8 −.7 −.9 .0 −.9 −2.4 −.2 −1.2 2.8 .2 −.5 .4 .6 −.1
−.1 −.7 −1.5 −.5 −.5 .0 −.1 −.6 −.6 −.7 .8 −1.4 −.3 −.3 −.3 .3 −2.1 −2.6 .0 −1.0 3.7 7.7 4.8 3.9 6.0 1.4 1.0 −.9 .1 .9
−2.7 −.2 1.6 1.9 .2 .7 −.1 −1.2 −1.8 −1.0 .1 −3.1 −3.1 −.7 .5 −1.6 −.9 .1 −.4 −.5 −4.8 4.5 −.3 .4 −1.8 1.8 .2 −.6 .0 .8 −1.8
−.4 −.1 .4 −.3 1.0 1.9 1.3 1.9 1.4 .4 1.4 1.9 1.8 1.2 .9 .1 −.7 .3 .3 −.2 .0 .9 −3.7 −1.1 1.6 1.8 1.4 .0 1.5 2.4 1.8 2.3 1.2
−.2 −.1 1.2 −.4 −1.0 .2 1.6 1.8 2.2 2.0 .6 .9 .4 .1 .8 .0 .4 1.1 .9 1.8 7.8 6.0 4.3 2.1 .1 −.1 2.0 .6 .4 .1 1.0
.8 .1 .1 −1.4 −1.7 −1.8 .5 −.5 2.2 1.0 .7 −.7 .2 1.7 .9 .8 1.3 .4 −.2 .2 .2 1.9 3.9 2.5 2.6 .9 −1.0 .5 −2.4 2.6 −.2 .8
1.2 .0 −.6 .0 1.3 .4 1.9 −1.0 2.5 .6 .6 1.5 1.3 3.2 3.3 .5 .8 .5 −.1 1.8 3.0 2.8 4.0 2.3 1.5 .7 2.0 2.1 1.5 1.4 1.2 .5
−.1 −1.3 −.9 −.1 .3 2.2 .5 −.1 −.9 −.7 .5 .5 −1.7 −.5 −1.1 −2.7 −1.8 −.1 2.6 4.1 4.1 1.6 1.0 −1.1 −.7 .0 −.5 −.1
.7 1.1 .6 .8 1.0 .9 .4 −.3 .2 .1 −1.6 −.4 −1.0 −.2 .1 .6 .9 −.6 −1.1 −.2 −1.1 −4.5 1.3 −.1 .8 −.3 3.0 −3.1 −1.7 −.5 .1
.0 −.8 .1 .4 −.5 .8 .5 .3 −.6 −1.7 −.6 −1.0 −1.0 −1.1 −1.0 .2 −.6 .3 −.1 .8 1.7 .6 −1.9 −1.5 −.4 −2.6

SATOBS : RMS O–B VECTOR DIFFERENCES (M/S) BETWEEN 101 AND 400 HPA FIGURE 24
MARCH 1995
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT


5 7 7
6 6 6 6 6 7 6 6 5 7 6 6 7 7 9 8 7 7 9 9 6 8 8 8 6
7 6 7 6 5 5 5 5 5 5 5 7 6 6 7 8 8 9 9 10 9 9 11 11 10 12 8 11 9 7 9
12 9 7 7 5 6 6 5 7 6 4 9 9 8 9 9 8 8 8 7 11 13 7 8 8 8 7 8 5 6 10
7 7 7 6 6 8 5 6 6 5 6 8 7 6 6 6 7 6 6 6 7 9 13 6 6 6 5 5 5 6 5 6 6
6 5 5 6 6 7 6 7 7 8 8 6 6 6 7 6 5 6 6 5 7 13 9 9 7 7 8 6 7 7 7 7 7
6 5 6 7 6 7 6 6 6 8 9 6 5 7 6 5 5 5 5 6 8 9 9 7 8 7 7 8 7 9 8 7 7
5 5 5 5 4 6 6 5 7 6 6 6 6 6 6 6 4 5 6 6 8 8 7 6 5 6 7 6 9 9 7 6
6 6 6 5 5 6 5 5 8 7 7 6 7 6 7 8 7 6 8 8 9 7 12 7 6 8 8 7
6 5 5 5 7 5 6 5 5 5 9 9 8 7 6 7 7 8 9 8 11 11 7 7 8 7 7 8 7 7 6
6 6 5 5 7 5 5 5 6 6 10 9 10 8 9 10 8 7 9 8 7 7 8 9 7 12

MONITORING OF SATELLITE TEMPERATURES

MONITORING CENTRE: BRACKNELL

MONTH:March, 95

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from NOAA-11, NOAA-12 500 km.

Standard of comparison :Background field from Bracknell global model.

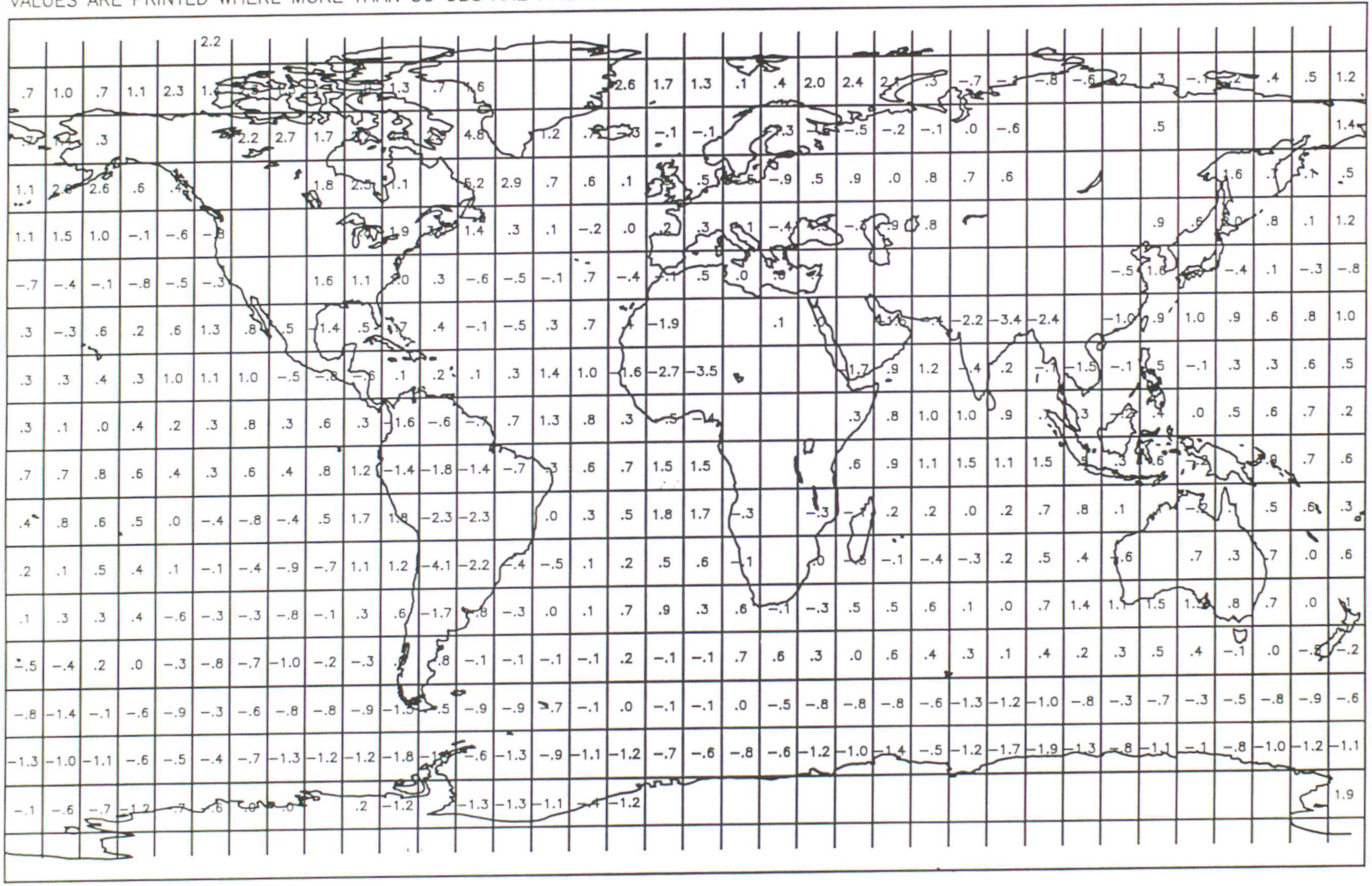
Selection Criteria :All SATEM soundings where number of observations > 30.

Data Extracted :Layer:850 - 1000 hPa
100 - 300 hPa
30 - 50 hPa

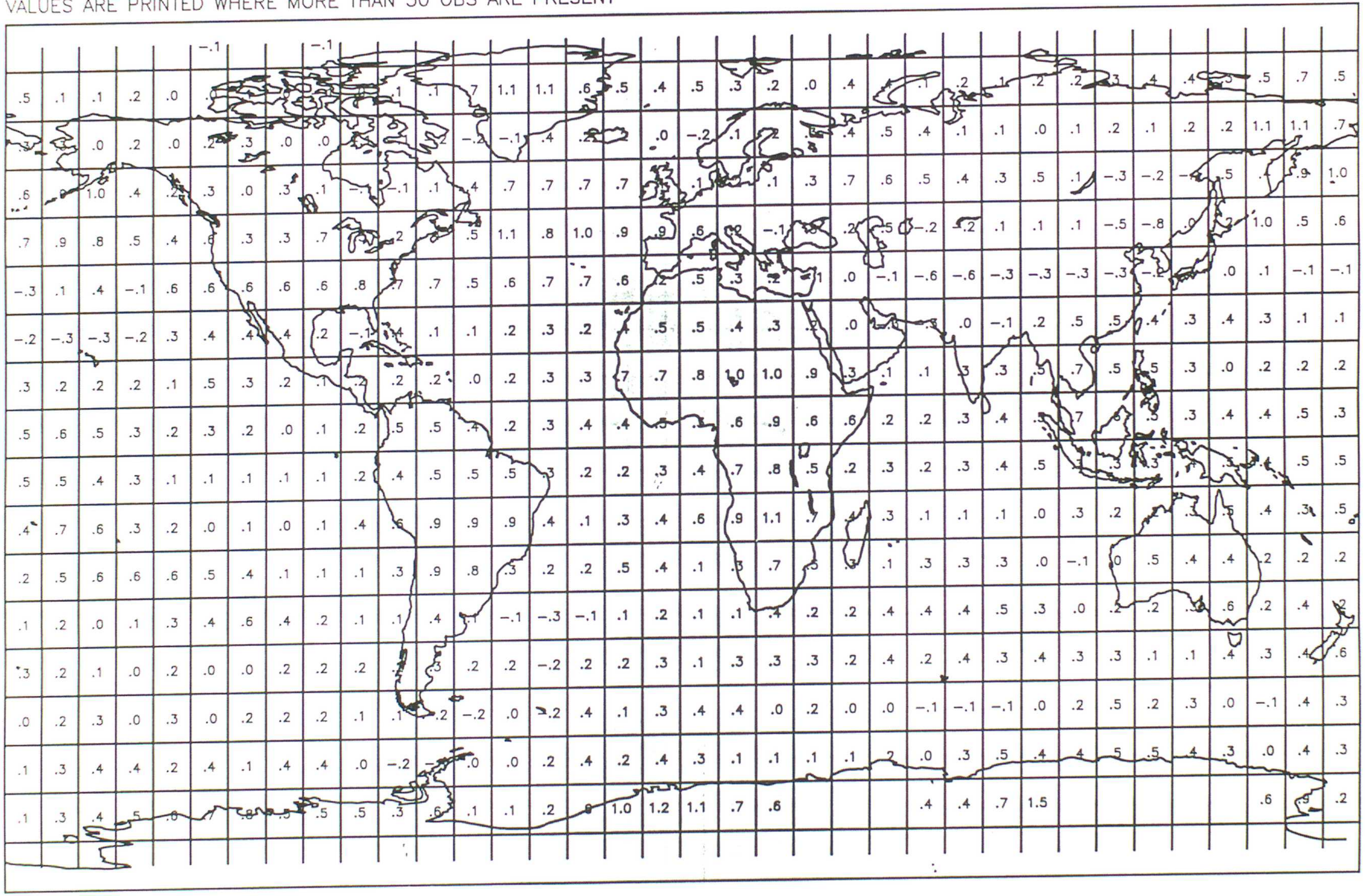
:Mean observation minus background temperature differences

500 KM SATEMS : MEAN O–B TEMPERATURE DIFFERENCES (DEG C) : 850 TO 1000 HPA
MARCH 1995
NOAA–11, USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT

FIGURE 25

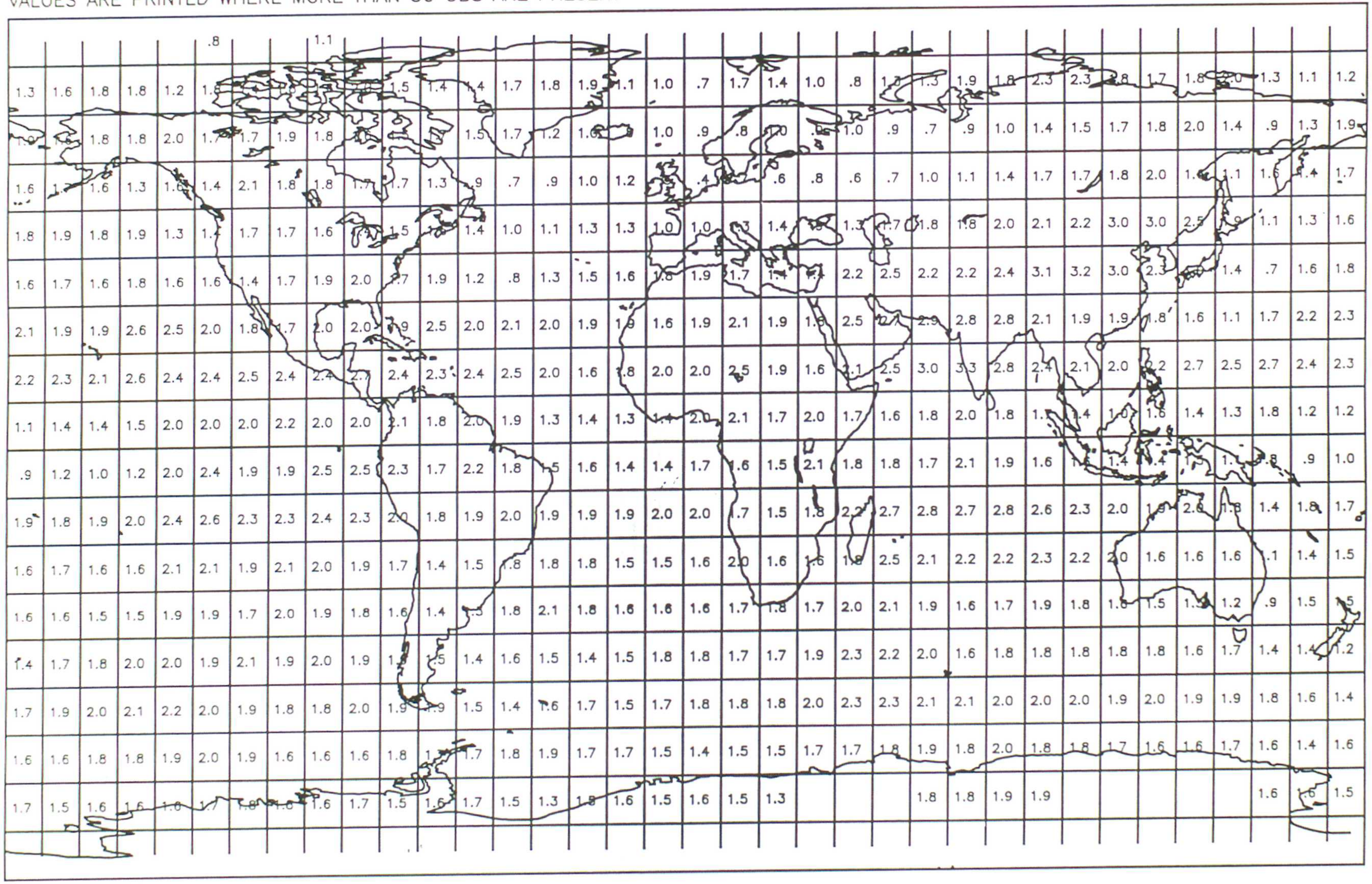

2.2
.7 1.0 .7 1.1 2.3 1.3 .7 .6 2.6 1.7 1.3 .1 .4 2.0 2.4 .3 -.7 -.1 -.8 -.6 .2 .3 -.1 .4 .5 1.2
.3 2.2 2.7 1.7 4.8 1.2 .7 -.3 -.1 -.1 .3 -.5 -.2 -.1 .0 -.6 .5 1.4
1.1 2.8 2.6 .6 .4 1.8 2.5 1.1 5.2 2.9 .7 .6 .1 .5 -.9 .5 .9 .0 .8 .7 .6 1.6 .5
1.1 1.5 1.0 -.1 -.6 -.8 1.9 1.4 .3 .1 -.2 .0 .2 .3 .1 -.4 .9 .8 .9 .8 .1 1.2
-.7 -.4 -.1 -.8 -.5 -.3 1.6 1.1 .0 .3 -.6 -.5 -.1 .7 -.4 -.1 .5 .0 -.5 1.6 -.4 .1 -.3 -.8
.3 -.3 .6 .2 .6 1.3 .8 .5 1.4 .5 .4 -.1 -.5 .3 .7 -1.9 .1 -2.2 -3.4 -2.4 -1.0 .9 1.0 .9 .6 .8 1.0
.3 .3 .4 .3 1.0 1.1 1.0 -.5 .1 .2 .1 .3 1.4 1.0 -1.6 -2.7 -3.5 1.7 .9 1.2 .4 .2 -1.5 -.1 .5 -.1 .3 .3 .6 .5
.3 .1 .0 .4 .2 .3 .8 .3 .6 .3 1.6 -.6 .7 1.3 .8 .3 .3 .8 1.0 1.0 .9 .3 .0 .5 .6 .7 .2
.7 .7 .8 .6 .4 .3 .6 .4 .8 1.2 -1.4 -1.8 -1.4 -.7 .6 .7 1.5 1.5 .6 .9 1.1 1.5 1.1 1.5 .7 .6
.4 .8 .6 .5 .0 -.4 -.8 -.4 .5 1.7 1.8 -2.3 -2.3 .0 .3 .5 1.8 1.7 -.3 -.3 .2 .2 .0 .2 .7 .8 .1 .5 .3
.2 .1 .5 .4 .1 -.1 -.4 -.9 -.7 1.1 1.2 -4.1 -2.2 -.4 -.5 .1 .2 .5 .6 -.1 -.4 -.3 .2 .5 .4 .6 .7 .3 .7 .0 .6
.1 .3 .3 .4 -.6 -.3 -.3 -.8 -.1 .3 .6 -1.7 .8 -.3 .0 .1 .7 .9 .3 .6 -.1 -.3 .5 .5 .6 .1 .0 .7 1.4 1.5 .8 .7 .0
-.5 -.4 .2 .0 -.3 -.8 -.7 -1.0 -.2 -.3 .8 -.1 -.1 -.1 -.1 .2 -.1 -.1 .7 .6 .3 .0 .6 .4 .3 .1 .4 .2 .3 .5 .4 -.1 .0 -.2
-.8 -1.4 -.1 -.6 -.9 -.3 -.6 -.8 -.8 -.9 .5 -.9 -.9 .7 -.1 .0 -.1 -.1 .0 -.5 -.8 -.8 -.8 -.6 -1.3 -1.2 -1.0 -.8 -.3 -.7 -.3 -.5 -.8 -.9 -.6
-1.3 -1.0 -1.1 -.6 -.5 -.4 -.7 -1.3 -1.2 -1.2 -1.8 -.6 -1.3 -.9 -1.1 -1.2 -.7 -.6 -.8 -.6 -1.2 -1.0 -1.4 -.5 -1.2 -1.7 -1.9 -1.3 -.8 -1.1 -.1 -.8 -1.0 -1.2 -1.1
-.1 -.6 -.7 -1.2 .7 .6 .0 .0 .2 -1.2 -1.3 -1.3 -1.1 -1.2 1.9

500 KM SATEMS : MEAN O−B TEMPERATURE DIFFERENCES (DEG C) : 100 TO 300 HPA
FIGURE 26
MARCH 1995
NOAA−11, USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT



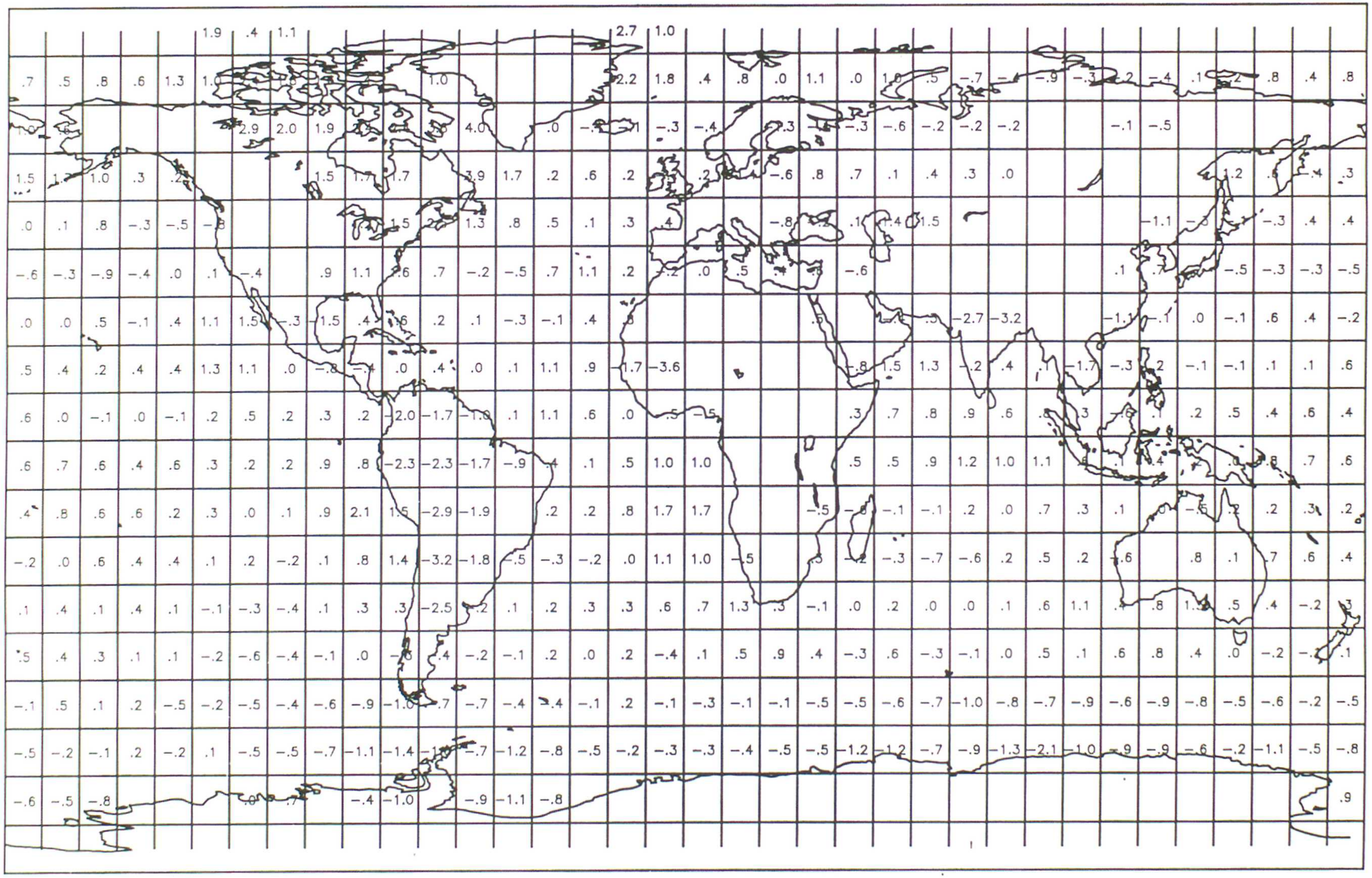
500 KM SATEMS : MEAN O-B TEMPERATURE DIFFERENCES (DEG C) : 30 TO 50 HPA
MARCH 1995
NOAA-11, USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT

FIGURE 27



500 KM SATEMS : MEAN O-B TEMPERATURE DIFFERENCES (DEG C) : 850 TO 1000 HPA
MARCH 1995
NOAA-12, USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT

FIGURE 28



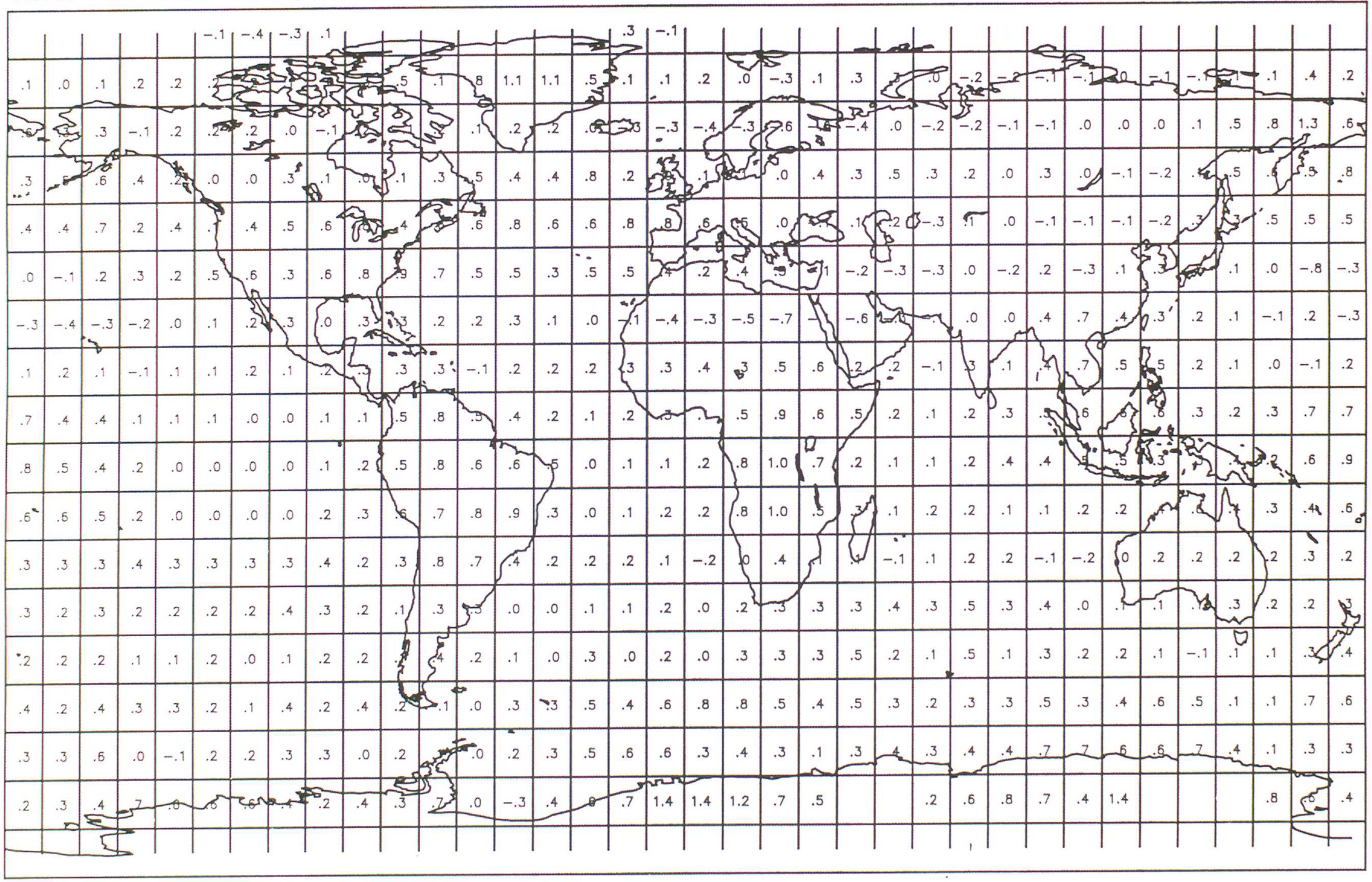
500 KM SATEMS : MEAN O-B TEMPERATURE DIFFERENCES (DEG C) : 100 TO 300 HPA

MARCH 1995

NOAA-12, USING ALL OBSERVATIONS

VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT

FIGURE 29



-.1 -.4 -.3 .1 .3 -.1
.1 .0 .1 .2 .2 .2 .5 .1 .8 1.1 1.1 .5 .1 .1 .2 .0 -.3 .1 .3 .3 .0 -.2 -.2 -.1 -.1 .0 -.1 -.1 .1 .1 .4 .2
.6 .3 .3 -.1 .2 .2 .2 .0 -.1 .1 .2 .2 .0 -.3 -.3 -.4 -.3 .6 -.4 .0 -.2 -.2 -.1 -.1 .0 .0 .0 .1 .5 .8 1.3 .6
.3 .5 .6 .4 .2 .0 .0 .3 .1 .0 .1 .3 .5 .4 .4 .8 .2 .1 .0 .4 .3 .5 .3 .2 .0 .3 .0 -.1 -.2 .5 .6 .5 .8
.4 .4 .7 .2 .4 .1 .4 .5 .6 .4 .6 .8 .6 .6 .8 .8 .6 .5 .0 .1 .2 -.3 .1 .0 -.1 -.1 -.1 -.2 .3 .3 .5 .5 .5
.0 -.1 .2 .3 .2 .5 .6 .3 .6 .8 .9 .7 .5 .5 .3 .5 .5 .4 .2 .4 .5 .1 -.2 -.3 -.3 .0 -.2 .2 -.3 .1 .3 .1 .0 -.8 -.3
-.3 -.4 -.3 -.2 .0 .1 .2 .3 .0 .3 .3 .2 .2 .3 .1 .0 -.1 -.4 -.3 -.5 -.7 -.6 .0 .0 .4 .7 .4 .3 .2 .1 -.1 .2 -.3
.1 .2 .1 -.1 .1 .1 .2 .1 .2 .3 .3 .3 -.1 .2 .2 .2 .3 .3 .4 .3 .5 .6 .2 .2 -.1 .3 .1 .4 .7 .5 .5 .2 .1 .0 -.1 .2
.7 .4 .4 .1 .1 .1 .0 .0 .1 .1 .5 .8 .5 .4 .2 .1 .2 .3 .5 .9 .6 .5 .2 .1 .2 .3 .5 .6 .6 .6 .3 .2 .3 .7 .7
.8 .5 .4 .2 .0 .0 .0 .0 .1 .2 .5 .8 .6 .6 .5 .0 .1 .1 .2 .8 1.0 .7 .2 .1 .1 .2 .4 .4 .5 .5 .3 .2 .6 .9
.6 .6 .5 .2 .0 .0 .0 .0 .2 .3 .6 .7 .8 .9 .3 .0 .1 .2 .2 .8 1.0 .5 .3 .1 .2 .2 .1 .1 .2 .2 .6 .4 .3 .4 .6
.3 .3 .3 .4 .3 .3 .3 .3 .4 .2 .3 .8 .7 .4 .2 .2 .2 .1 -.2 .0 .4 .1 .1 -.1 .1 .2 .2 -.1 -.2 .0 .2 .2 .2 .2 .3 .2
.3 .2 .3 .2 .2 .2 .2 .4 .3 .2 .1 .3 .3 .0 .0 .1 .1 .2 .0 .2 .3 .3 .3 .4 .3 .5 .3 .4 .0 .1 .1 .1 .3 .2 .2 .3
.2 .2 .2 .1 .1 .2 .0 .1 .2 .2 .4 .2 .1 .0 .3 .0 .2 .0 .3 .3 .3 .5 .2 .1 .5 .1 .3 .2 .2 .1 -.1 .1 .1 .3 .4
.4 .2 .4 .3 .3 .2 .1 .4 .2 .4 .2 .1 .0 .3 .3 .5 .4 .6 .8 .8 .5 .4 .5 .3 .2 .3 .3 .5 .3 .4 .6 .5 .1 .1 .7 .6
.3 .3 .6 .0 -.1 .2 .2 .3 .3 .0 .2 .0 .2 .3 .5 .6 .6 .3 .4 .3 .1 .3 .4 .3 .4 .4 .7 .7 .6 .6 .7 .4 .1 .3 .3
.2 .3 .4 .7 .6 .6 .6 .4 .2 .4 .3 .7 .0 -.3 .4 .7 1.4 1.4 1.2 .7 .5 .2 .6 .8 .7 .4 1.4 .8 .6 .4

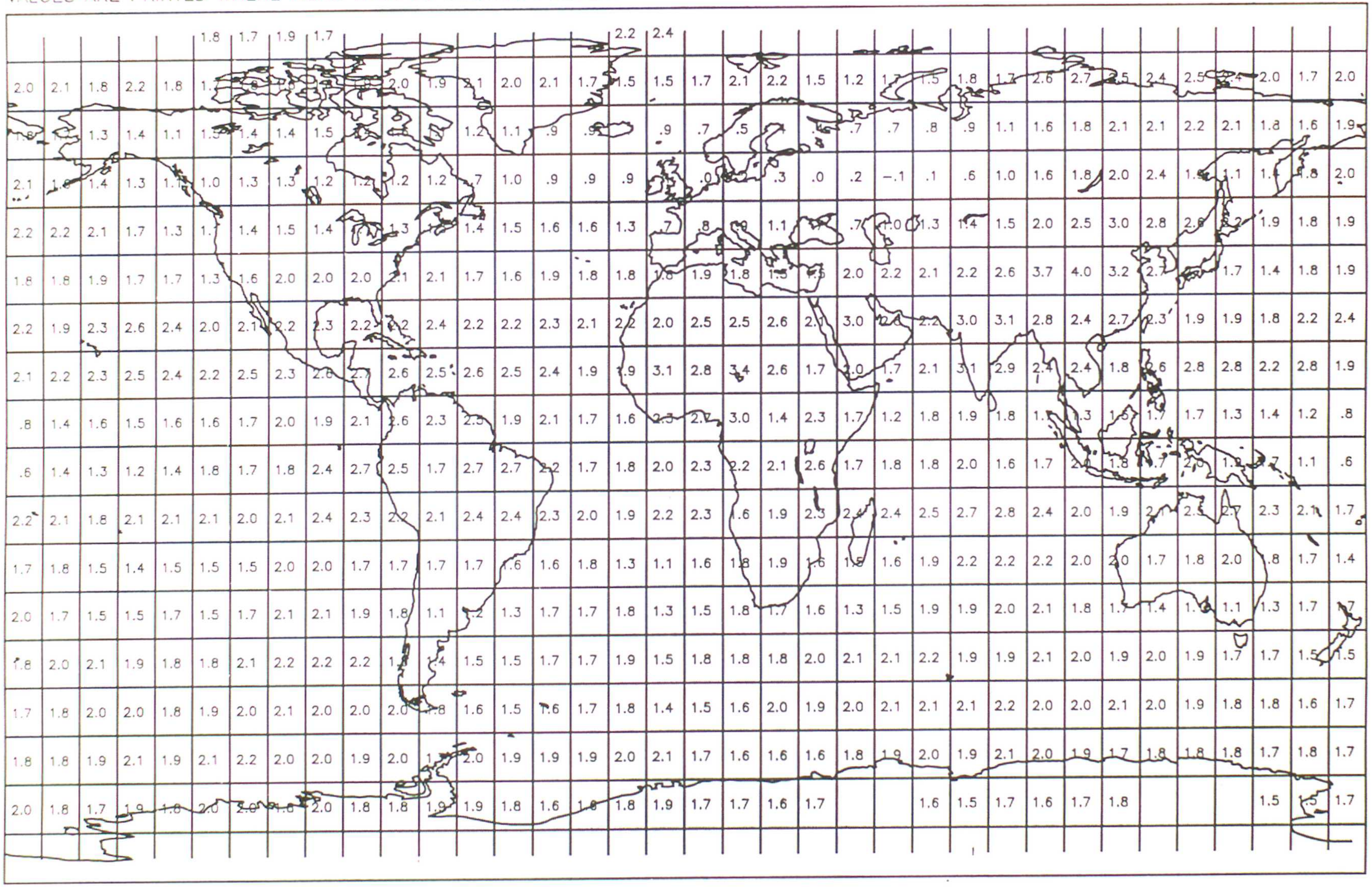
500 KM SATEMS : MEAN O-B TEMPERATURE DIFFERENCES (DEG C) : 30 TO 50 HPA

FIGURE 30

MARCH 1995

NOAA-12, USING ALL OBSERVATIONS

VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT



					1.8	1.7	1.9	1.7								2.2	2.4																		
2.0	2.1	1.8	2.2	1.8	1.7	.8	1.6	[illegible]	[illegible]	2.0	1.9	2.1	2.0	2.1	1.7	1.5	1.5	1.7	2.1	2.2	1.5	1.2	1.7	1.5	1.8	1.7	2.6	2.7	2.5	2.4	2.5	2.4	2.0	1.7	2.0
1.8	[illegible]	1.3	1.4	1.1	1.5	1.4	1.4	1.5	[illegible]	[illegible]	[illegible]	1.2	1.1	.9	.9	[illegible]	.9	.7	.5	[illegible]	[illegible]	.7	.7	.8	.9	1.1	1.6	1.8	2.1	2.1	2.2	2.1	1.8	1.6	1.9
2.1	1.8	1.4	1.3	1.1	1.0	1.3	1.3	1.2	1.2	1.2	1.2	.7	1.0	.9	.9	.9	[illegible]	.0	[illegible]	.3	.0	.2	−.1	.1	.6	1.0	1.6	1.8	2.0	2.4	1.9	1.1	1.4	1.8	2.0
2.2	2.2	2.1	1.7	1.3	1.1	1.4	1.5	1.4	[illegible]	1.3	[illegible]	1.4	1.5	1.6	1.6	1.3	.7	.8	[illegible]	1.1	[illegible]	.7	1.0	1.3	1.4	1.5	2.0	2.5	3.0	2.8	2.6	2.2	1.9	1.8	1.9
1.8	1.8	1.9	1.7	1.7	1.3	1.6	2.0	2.0	2.0	2.1	2.1	1.7	1.6	1.9	1.8	1.8	1.8	1.9	1.8	1.5	1.5	2.0	2.2	2.1	2.2	2.6	3.7	4.0	3.2	2.7	[illegible]	1.7	1.4	1.8	1.9
2.2	1.9	2.3	2.6	2.4	2.0	2.1	2.2	2.3	2.2	2.2	2.4	2.2	2.2	2.3	2.1	2.2	2.0	2.5	2.5	2.6	2.1	3.0	2.6	2.2	3.0	3.1	2.8	2.4	2.7	2.3	1.9	1.9	1.8	2.2	2.4
2.1	2.2	2.3	2.5	2.4	2.2	2.5	2.3	2.6	2.7	2.6	2.5	2.6	2.5	2.4	1.9	1.9	3.1	2.8	3.4	2.6	1.7	2.0	1.7	2.1	3.1	2.9	2.4	2.4	1.8	2.6	2.8	2.8	2.2	2.8	1.9
.8	1.4	1.6	1.5	1.6	1.6	1.7	2.0	1.9	2.1	2.6	2.3	2.3	1.9	2.1	1.7	1.6	2.3	2.7	3.0	1.4	2.3	1.7	1.2	1.8	1.9	1.8	[illegible]	1.3	1.5	1.7	1.7	1.3	1.4	1.2	.8
.6	1.4	1.3	1.2	1.4	1.8	1.7	1.8	2.4	2.7	2.5	1.7	2.7	2.7	2.2	1.7	1.8	2.0	2.3	2.2	2.1	2.6	1.7	1.8	1.8	2.0	1.6	1.7	2.0	1.8	1.7	2.0	[illegible]	.7	1.1	.6
2.2	2.1	1.8	2.1	2.1	2.1	2.0	2.1	2.4	2.3	2.2	2.1	2.4	2.4	2.3	2.0	1.9	2.2	2.3	1.6	1.9	2.3	2.4	2.4	2.5	2.7	2.8	2.4	2.0	1.9	2.1	2.5	2.7	2.3	2.1	1.7
1.7	1.8	1.5	1.4	1.5	1.5	1.5	2.0	2.0	1.7	1.7	1.7	1.7	1.6	1.6	1.8	1.3	1.1	1.6	1.8	1.9	1.6	1.5	1.6	1.9	2.2	2.2	2.2	2.0	2.0	1.7	1.8	2.0	1.8	1.7	1.4
2.0	1.7	1.5	1.5	1.7	1.5	1.7	2.1	2.1	1.9	1.8	1.1	1.2	1.3	1.7	1.7	1.8	1.3	1.5	1.8	1.7	1.6	1.3	1.5	1.9	1.9	2.0	2.1	1.8	1.7	1.4	[illegible]	1.1	1.3	1.7	1.7
1.8	2.0	2.1	1.9	1.8	1.8	2.1	2.2	2.2	2.2	[illegible]	1.4	1.5	1.5	1.7	1.7	1.9	1.5	1.8	1.8	1.8	2.0	2.1	2.1	2.2	1.9	1.9	2.1	2.0	1.9	2.0	1.9	1.7	1.7	1.5	1.5
1.7	1.8	2.0	2.0	1.8	1.9	2.0	2.1	2.0	2.0	2.0	1.8	1.6	1.5	1.6	1.7	1.8	1.4	1.5	1.6	2.0	1.9	2.0	2.1	2.1	2.1	2.2	2.0	2.0	2.1	2.0	1.9	1.8	1.8	1.6	1.7
1.8	1.8	1.9	2.1	1.9	2.1	2.2	2.0	2.0	1.9	2.0	[illegible]	2.0	1.9	1.9	1.9	2.0	2.1	1.7	1.6	1.6	1.6	1.8	1.9	2.0	1.9	2.1	2.0	1.9	1.7	1.8	1.8	1.8	1.7	1.8	1.7
2.0	1.8	1.7	1.9	1.8	2.0	2.0	1.8	2.0	1.8	1.8	1.9	1.9	1.8	1.6	1.8	1.8	1.9	1.7	1.7	1.6	1.7			1.6	1.5	1.7	1.6	1.7	1.8				1.5	1.5	1.7

TABLE 8

MONTHLY MONITORING OF MARINE SURFACE OBSERVATIONS (COSNA)
DATA TYPE:- DRIFTER
MONITORING CENTRE: BRACKNELL
MONTH:March, 95

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from each unique identifier for drifting buoy.

Area monitored :10°N - 80°N, 85°W - 0°W

Standard of comparison :Background field from Bracknell global model.

Position :Average latitude and longitude for period.

Observation times :All hours combined.

Elements monitored :Mean sea-level pressure (hPa)
:Wind speed ($m\ s^{-1}$)
:Wind direction (degrees)

Parameters monitored

:NOBS :Number of observations received excluding duplicates.

:NGE :Number of observations with gross errors.

:PGE :Percentage of observations with gross errors.

:SD :SD of difference of observations from background values excluding those with gross errors.

:BIAS :Mean difference of observations from background values excluding those with gross errors.
N.B. A positive bias indicates the observation is veered to the background

:RMS :Root Mean Square difference of observations from background values excluding those with gross errors

GROSS ERROR LIMITS :15 hPa (pressure)
:25 $m\ s^{-1}$ (Vector Wind)

N.B. Observations of wind direction are only included in the wind direction statistics if the wind speed > 3 $m\ s^{-1}$

IDENTIFIER	LAT.	LONG.	HOUR	ELEM	LEVEL	NOBS	NGE	PGE	SD	BIAS	RMS
MEAN SEA LEVEL PRESSURE											
25550	62.5	-40.9	ALL	MSLP	SUR	46	0	0	1.8	0.1	1.8
25565	62.9	-36.6	ALL	MSLP	SUR	564	4	1	2.5	-0.2	2.5
29503	36.3	-20.0	ALL	MSLP	SUR	1	0	0	0.0	-10.2	10.2
44614	54.9	-12.0	ALL	MSLP	SUR	1503	1	0	1.8	0.1	1.8
44616	52.7	-36.5	ALL	MSLP	SUR	910	0	0	1.9	0.5	1.9
44624	50.6	-19.4	ALL	MSLP	SUR	1247	5	0	1.4	-0.1	1.4
44726	50.2	-48.0	ALL	MSLP	SUR	1314	31	2	2.6	0.8	2.7
44728	54.8	-35.6	ALL	MSLP	SUR	870	4	0	1.8	-0.3	1.8
44762	52.4	-10.5	ALL	MSLP	SUR	645	0	0	1.6	0.4	1.7
44764	59.4	-20.7	ALL	MSLP	SUR	1740	4	0	1.6	0.1	1.6
44766	52.6	-16.2	ALL	MSLP	SUR	1442	1	0	1.7	-0.4	1.7
44774	53.9	-10.0	ALL	MSLP	SUR	12	5	42	5.6	-0.1	5.6
44775	56.2	-8.6	ALL	MSLP	SUR	834	2	0	1.7	0.5	1.8
44776	60.3	-14.2	ALL	MSLP	SUR	1766	1	0	1.7	0.1	1.7
44780	55.1	-14.8	ALL	MSLP	SUR	1505	5	0	1.7	0.1	1.7
62515	45.3	-18.3	ALL	MSLP	SUR	154	0	0	1.0	0.5	1.1
62517	47.4	-18.9	ALL	MSLP	SUR	366	0	0	0.9	0.7	1.1
62518	45.0	-19.5	ALL	MSLP	SUR	441	0	0	1.9	-0.9	2.1
62519	49.3	-19.6	ALL	MSLP	SUR	473	0	0	1.0	0.2	1.0
62524	25.5	-41.9	ALL	MSLP	SUR	634	0	0	1.4	0.1	1.5
62805	58.0	-28.6	ALL	MSLP	SUR	580	1	0	1.6	-0.3	1.6
64528	59.1	-14.6	ALL	MSLP	SUR	1460	1	0	1.7	-0.2	1.7
64529	60.7	-27.4	ALL	MSLP	SUR	926	4	0	2.2	-0.1	2.2
64544	55.8	-37.4	ALL	MSLP	SUR	263	0	0	1.8	-0.5	1.9
64546	60.8	-26.7	ALL	MSLP	SUR	347	0	0	1.9	-1.8	2.6
64547	58.5	-22.7	ALL	MSLP	SUR	124	0	0	2.0	2.0	2.8
65562	60.5	-30.7	ALL	MSLP	SUR	1098	0	0	2.1	-0.1	2.1
65571	57.7	-11.8	ALL	MSLP	SUR	1649	1	0	1.8	-0.4	1.8
65592	60.7	-14.2	ALL	MSLP	SUR	1346	30	2	2.3	5.4	5.9
WIND SPEED											
44762	52.4	-10.5	ALL	SPEED	SUR	274	0	0	5.0	-5.2	7.2
44764	59.4	-20.7	ALL	SPEED	SUR	1223	1	0	3.5	-2.5	4.2
44776	60.3	-14.2	ALL	SPEED	SUR	1261	10	1	2.6	-1.2	2.9
62518	45.0	-19.5	ALL	SPEED	SUR	439	0	0	1.9	0.1	1.9
62519	49.3	-19.6	ALL	SPEED	SUR	465	1	0	1.5	-0.1	1.5
64544	55.8	-37.4	ALL	SPEED	SUR	142	4	3	4.2	-8.4	9.4
WIND DIRECTION											
44762	52.4	-10.5	ALL	DIRN.	SUR	267	0	0	65.1	6.4	65.4
44764	59.4	-20.7	ALL	DIRN.	SUR	1081	1	0	29.8	-9.1	31.2
44776	60.3	-14.2	ALL	DIRN.	SUR	1177	10	1	63.7	8.2	64.2
62518	45.0	-19.5	ALL	DIRN.	SUR	339	0	0	20.5	10.0	22.8
62519	49.3	-19.6	ALL	DIRN.	SUR	376	1	0	17.2	7.4	18.7
64544	55.8	-37.4	ALL	DIRN.	SUR	123	4	3	92.1	-43.0	101.7

TABLE 9

MONTHLY MONITORING OF AIRCRAFT OBSERVATIONS (COSNA)
MONITORING CENTRE: BRACKNELL
MONTH:March, 95

Monitoring procedures:		
Period		:One calendar month.
Data monitored		:Statistics for each airline carrier.
Area monitored		:40°N - 70°N, 60°W - 0°W.
Standard of comparison		:Background field from Bracknell global model.
Observation times		:All hours combined.
Level(s) monitored		:300.0 - 150.0 hPa
Elements monitored		:TEMP in °C ; WIND in m s^{-1}
Parameters monitored	:N REP.	:Number of observations received excluding duplicates.
	:PG	:Percentage of observations with gross errors.
	:PR	:Percentage of observations rejected by quality control including rejections from the duplicate check.
	:PC	:Percentage of observations with calm winds.
	:RMS	:Root Mean Square difference of observations from background values excluding those with gross errors in Temperature & vector wind.
	:BIAS	:Mean difference of observations from background values excluding those with gross errors in Temperature & vector wind.
GROSS ERROR LIMITS		:10.0 °C ; 60 m s^{-1} Vector Wind
SELECTION CRITERIA		:N REP $\geq$ 20

	TEMPERATURE					WIND					
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
AAL	2220	0	1	1.8	-0.4	2231	0	2	0	7.6	1.0
AAN	41	2	7	1.2	-0.5	38	0	5	0	7.0	-0.2
ACA	623	0	1	1.9	0.0	633	0	1	0	7.5	0.5
ACF	21	5	0	2.1	1.4	21	0	0	0	8.6	1.9
AEA	61	7	100	4.6	2.1	58	2	5	0	7.8	-0.3
AEL	355	1	4	2.1	-0.6	357	0	4	0	7.7	0.8
AFL	100	3	100	3.3	1.8	102	1	100	0	11.1	0.6
AFR	826	1	6	2.0	-0.4	839	0	6	0	7.5	0.8
AIC	38	0	3	2.0	0.9	40	0	10	0	12.4	1.1
AMX	140	0	3	2.4	-0.8	140	0	2	0	9.8	-0.1
ANZ	174	0	4	2.0	-0.9	176	0	5	1	6.7	0.3
AOM	256	1	2	1.7	0.4	256	0	3	0	8.2	0.2
ATN	63	3	10	2.5	-0.9	61	0	7	0	11.9	3.2
AUA	56	0	2	1.7	-0.8	58	0	3	0	7.1	2.6
AVA	99	1	4	2.3	-0.2	100	0	2	0	7.8	-0.1
AZA	354	1	1	1.9	0.2	352	0	1	0	7.9	1.1
BAL	84	1	20	1.8	-0.9	86	0	20	0	8.5	-0.6
BAW	1216	0	5	2.0	-0.1	1229	0	5	0	8.1	0.9
BBB	27	4	19	2.3	-1.6	28	0	14	0	7.1	1.0
BWA	99	1	1	1.8	0.5	99	0	2	0	8.6	1.1
CDN	422	0	2	1.8	0.4	423	0	3	1	6.7	1.1
CFC	34	0	6	1.9	-0.2	34	0	6	0	5.9	0.7
CFG	426	1	6	2.3	-1.3	433	0	6	0	8.5	-0.1
CKT	39	0	8	1.6	-0.1	38	0	8	0	7.8	0.2
CLX	69	0	1	1.7	-0.7	69	0	1	1	6.9	1.5
CMM	20	5	60	2.0	-1.4	20	0	15	0	6.7	2.4
COA	289	1	2	1.9	0.4	296	0	1	0	7.4	0.6
CRL	90	1	1	1.7	0.1	89	0	0	0	7.3	0.9
CTM	33	0	24	2.9	-2.1	33	0	24	0	7.6	2.6
CUB	80	0	10	2.9	1.6	84	0	100	0	13.6	0.2
DAF	24	0	0	1.8	0.7	24	0	0	0	6.7	-0.7
DAL	2338	0	2	1.9	0.2	2380	0	2	0	8.1	0.9
DHL	462	0	100	3.2	-0.9	469	0	1	0	9.4	-0.2
DLH	1986	0	11	2.1	0.3	2006	0	12	1	7.3	0.7
DOA	64	0	19	2.6	-0.8	64	0	16	0	8.0	-1.5
ELY	146	1	12	1.9	-0.3	147	0	12	0	7.6	0.8
FDX	320	0	2	1.8	0.7	328	0	1	0	7.9	0.9
FIN	315	0	2	2.0	0.2	312	0	2	1	7.6	0.7
GAF	74	0	1	1.7	0.1	76	0	3	0	6.0	0.7
GFA	25	0	4	1.5	0.4	25	0	4	0	5.8	0.2
HLF	67	0	3	2.4	-1.1	67	0	1	0	7.6	-0.6
IBE	910	1	19	2.0	0.1	905	0	19	0	9.4	0.8
ICE	342	0	0	1.7	0.2	342	0	2	1	7.3	0.0
IQQ	27	0	11	1.8	0.8	28	0	11	0	8.2	-1.1
KLM	1394	1	2	2.0	0.2	1410	0	2	0	7.6	0.8
LDA	121	2	16	2.3	-1.0	122	0	17	1	7.7	0.9
LDI	132	1	1	2.4	-2.0	132	0	0	0	7.9	0.8
LIB	140	3	3	1.9	0.2	143	0	3	0	9.4	0.6
LOT	200	0	1	1.6	-0.2	203	0	0	0	5.5	-0.1
LTU	441	1	2	1.7	0.0	434	0	2	0	7.8	0.5
MKD	53	2	2	1.8	-0.5	52	0	0	0	8.6	-0.1
MPH	532	0	2	2.6	-1.5	531	0	2	0	8.1	0.4
NWA	1641	1	2	2.1	1.0	1699	0	3	0	8.3	0.7
OAL	30	0	3	2.5	2.0	32	0	3	0	6.9	1.2
PIA	23	0	4	2.0	0.1	23	0	0	0	7.1	2.0
RJA	91	0	7	2.2	0.5	91	1	5	0	8.5	0.1
ROT	26	0	0	1.7	-1.1	26	0	0	0	5.8	2.4
RRR	97	0	28	2.9	-0.4	96	0	26	0	9.4	0.5
SAB	73	0	3	1.7	-0.3	75	0	3	0	8.5	1.9

		TEMPERATURE						WIND			
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
SAS	1011	0	0	1.7	-0.2	1011	0	2	1	7.5	0.3
SIA	56	0	0	2.0	-0.9	56	0	5	0	9.0	-0.6
SPP	93	0	9	1.9	-0.7	93	0	10	0	7.4	-0.9
SVA	96	0	7	1.6	0.0	102	0	9	0	9.4	-0.3
SWR	176	1	3	1.7	0.5	185	1	3	0	6.6	0.5
TAP	190	1	8	2.3	-0.1	189	0	7	0	8.7	0.8
TEJ	47	2	28	2.0	-0.5	48	0	27	0	7.6	0.6
TIH	63	2	5	1.9	-0.1	64	0	8	0	9.1	1.5
TOW	63	2	8	2.3	0.1	68	0	9	1	9.9	0.5
TWA	696	1	2	2.0	-0.5	702	0	2	0	7.7	0.8
UAL	1433	0	2	2.0	-0.6	1452	0	2	0	7.7	0.3
ULE	60	2	0	1.8	-0.5	60	0	2	0	8.1	2.1
UPS	605	1	18	1.7	0.0	627	0	18	0	8.6	1.0
USA	190	0	3	1.8	-0.2	194	0	2	0	6.9	1.8
VIA	65	0	2	2.0	0.9	67	0	1	0	8.2	0.5
VIR	200	0	2	1.5	0.0	202	0	1	0	7.7	2.0
WOA	32	0	0	2.8	1.4	31	0	0	0	8.0	-0.2
BA	7399	0	23	1.6	0.4	7399	0	23	0	7.1	1.1
KL	3240	1	63	2.7	2.3	3240	0	20	0	7.8	1.2
LH	358	0	12	1.9	0.3	351	0	70	0	6.6	-0.2
M	180	1	100	3.3	0.5	185	0	100	0	12.4	1.9
N	228	1	4	2.5	0.5	233	0	2	0	9.6	0.5

TABLE 10

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
MONITORING CENTRE: BRACKNELL
MONTH:March, 95

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for radiosonde TEMPs.
Area monitored		:0°N - 90°N, 100°W - 40°E
Standard of comparison		:Background field from Bracknell global model.
Position		:Average latitude and longitude for period.
Observation times		:00, 12 UTC.
Level monitored		:100 hPa.
Element monitored		:GEOPOTENTIAL HEIGHT in metres
Parameters monitored	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown during period.
	:% REJ	:Percentage of observations rejected by quality control at level shown during period.
	:SD	:SD of difference of observations from background values at level shown excluding those with gross errors.
	:BIAS	:Mean difference of observations from background values at level shown excluding those with gross errors.

GROSS ERROR LIMITS :Defined in Appendix I.1

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	SD	RMS	BIAS
DBLK	00	Z	100	1	0	0.0	2.0	-2.0
EHOA	00	Z	100	1	0	0.0	26.0	26.0
EHOA	12	Z	100	14	0	16.4	23.9	17.4
FNOR	00	Z	100	9	0	22.0	35.5	27.9
FNOR	12	Z	100	10	0	16.4	19.9	11.3
FNOU	00	Z	100	8	0	39.3	39.9	-7.0
FNOU	12	Z	100	8	0	18.1	19.6	-7.5
FNPH	00	Z	100	13	0	19.7	20.1	4.1
FNPH	12	Z	100	12	0	16.5	21.8	-14.3
FNRS	00	Z	100	13	0	19.0	22.0	11.2
FNRS	12	Z	100	12	0	15.5	17.0	-6.9
GACA	00	Z	100	26	0	18.2	20.4	9.1
GACA	12	Z	100	25	0	15.4	15.7	-3.1
GAMA	00	Z	100	1	0	0.0	38.0	38.0
JBOA	00	Z	100	1	0	0.0	4.0	-4.0
JIVB	00	Z	100	1	0	0.0	54.0	54.0
LDWR	00	Z	100	29	0	20.7	21.4	-5.4
LDWR	12	Z	100	26	0	18.5	19.2	-5.1
OXYL	00	Z	100	18	0	20.8	27.2	17.6
OXYL	12	Z	100	18	0	22.8	30.5	20.3
SHIPAF	00	Z	100	1	0	0.0	31.0	31.0
SHIPAF	12	Z	100	1	0	0.0	61.0	61.0
V2LV	00	Z	100	23	0	13.6	13.6	-1.3
V2LV	12	Z	100	19	0	21.9	27.4	16.5
V2LX	00	Z	100	23	0	25.4	36.2	25.9
V2LX	12	Z	100	23	0	27.1	37.6	26.0
V3LV	00	Z	100	1	0	0.0	26.0	-26.0
ZDLG	00	Z	100	1	0	0.0	6.0	-6.0
03953	00	Z	100	27	1	11.8	17.2	12.5
03953	12	Z	100	26	0	15.6	17.5	8.1
04018	00	Z	100	27	0	16.2	18.8	9.7
04018	12	Z	100	28	0	15.3	24.4	19.0
04220	00	Z	100	28	0	17.0	26.0	19.8
04220	12	Z	100	29	0	20.5	30.1	22.0
04270	00	Z	100	25	0	14.8	20.7	14.4
04270	12	Z	100	28	0	19.6	22.4	10.9
04339	00	Z	100	27	0	46.2	48.6	15.0
04339	12	Z	100	29	0	19.6	25.2	15.8
04360	00	Z	100	27	0	13.0	13.6	4.0
04360	12	Z	100	28	0	14.3	18.2	11.3
08001	00	Z	100	22	0	18.4	30.8	24.7
08001	12	Z	100	26	0	15.3	22.2	16.2
08508	00	Z	100	28	0	21.5	32.5	24.4
08508	12	Z	100	28	0	19.4	23.6	13.4
08594	00	Z	100	24	0	8.8	14.0	-10.9
08594	12	Z	100	24	0	13.0	14.9	-7.4
60020	00	Z	100	28	0	13.6	25.6	21.8
60020	12	Z	100	27	0	19.5	23.2	12.6
71600	00	Z	100	27	0	12.7	28.5	25.6
71600	12	Z	100	27	0	10.6	18.1	14.7
72201	00	Z	100	26	0	22.5	35.0	26.7
72201	12	Z	100	26	0	25.8	39.6	30.1
72402	00	Z	100	27	0	27.1	44.0	34.6
72402	12	Z	100	26	0	33.0	60.0	50.1
74494	00	Z	100	26	0	19.6	20.2	-5.1
74494	12	Z	100	28	0	18.1	25.0	17.2
78016	00	Z	100	1	0	0.0	16.0	16.0

TABLE 11

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
MONITORING CENTRE: BRACKNELL
MONTH:March, 95

Monitoring procedures:

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for radiosonde TEMPs.
Area monitored		:0°N - 90°N, 100°W - 40°E
Standard of comparison		:Background field from Bracknell global model.
Position		:Average latitude and longitude for period.
Observation times		:00, 12 UTC.
Level monitored		:500 hPa.
Element monitored		:GEOPOTENTIAL HEIGHT in metres
Parameters monitored	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown during period.
	:% REJ	:Percentage of observations rejected by quality control at level shown during period.
	:SD	:SD of difference of observations from background values at level shown excluding those with gross errors.
	:BIAS	:Mean difference of observations from background values at level shown excluding those with gross errors.

GROSS ERROR LIMITS :Defined in Appendix I.1

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	SD	RMS	BIAS
DBLK	00	Z	500	1	0	0.0	10.0	10.0
EHOA	00	Z	500	1	0	0.0	16.0	16.0
EHOA	12	Z	500	18	0	6.8	12.3	10.2
FNOR	00	Z	500	10	0	9.4	9.6	1.9
FNOR	12	Z	500	10	0	10.8	10.8	0.5
FNOU	00	Z	500	9	0	6.6	6.6	0.9
FNOU	12	Z	500	9	0	13.9	14.8	-5.3
FNPH	00	Z	500	13	0	8.4	8.5	1.3
FNPH	12	Z	500	12	0	10.6	15.5	-11.3
FNRS	00	Z	500	13	0	7.9	8.0	-0.8
FNRS	12	Z	500	13	0	8.5	12.5	-9.2
GACA	00	Z	500	26	0	15.9	16.3	3.7
GACA	12	Z	500	25	0	13.5	13.5	0.0
GAMA	00	Z	500	1	0	0.0	8.0	-8.0
JBOA	00	Z	500	1	0	0.0	10.0	-10.0
JIVB	00	Z	500	1	0	0.0	17.0	17.0
LDWR	00	Z	500	29	0	12.6	12.7	-1.7
LDWR	12	Z	500	27	0	10.2	10.4	1.6
NNPJ	00	Z	500	1	0	0.0	17.0	-17.0
OXYL	00	Z	500	18	0	16.5	17.8	6.5
OXYL	12	Z	500	20	0	27.9	28.4	5.2
SHIP	00	Z	500	1	0	0.0	19.0	19.0
SHIP	12	Z	500	2	0	13.0	15.3	8.0
SHIPAF	00	Z	500	3	0	9.6	9.8	2.3
SHIPAF	12	Z	500	1	0	0.0	6.0	6.0
V2LV	00	Z	500	25	0	11.3	12.4	-5.1
V2LV	12	Z	500	21	0	9.6	10.0	-2.8
V2LX	00	Z	500	23	1	11.4	13.4	7.1
V2LX	12	Z	500	24	0	15.3	16.8	6.8
V3LV	00	Z	500	1	0	0.0	24.0	-24.0
ZDLG	00	Z	500	1	0	0.0	23.0	23.0
03953	00	Z	500	29	0	9.9	11.2	5.1
03953	12	Z	500	28	0	12.0	13.3	5.9
04018	00	Z	500	28	0	16.1	16.5	3.3
04018	12	Z	500	29	0	14.9	18.0	10.0
04220	00	Z	500	29	0	22.3	22.4	1.5
04220	12	Z	500	29	0	16.7	18.0	6.9
04270	00	Z	500	29	0	19.1	21.3	9.4
04270	12	Z	500	28	0	17.3	18.5	6.5
04339	00	Z	500	27	1	14.6	14.9	3.2
04339	12	Z	500	29	0	17.6	18.1	4.3
04360	00	Z	500	27	0	14.8	15.8	-5.4
04360	12	Z	500	28	0	20.9	21.0	1.6
08001	00	Z	500	25	0	16.5	19.9	11.1
08001	12	Z	500	28	0	15.3	15.4	1.6
08508	00	Z	500	28	0	11.4	14.5	8.9
08508	12	Z	500	29	0	10.6	11.1	3.4
08594	00	Z	500	25	0	10.9	11.4	-3.4
08594	12	Z	500	26	0	8.9	8.9	-0.7
60020	00	Z	500	28	0	15.6	19.9	12.4
60020	12	Z	500	26	0	16.7	19.4	9.7
71600	00	Z	500	27	0	14.3	14.7	3.4
71600	12	Z	500	27	0	9.6	10.7	4.7
72201	00	Z	500	27	0	7.6	11.7	8.9
72201	12	Z	500	25	0	10.3	11.9	6.0
72402	00	Z	500	27	0	10.7	13.9	8.9
72402	12	Z	500	28	0	12.5	17.2	11.8
74494	00	Z	500	26	0	10.6	11.1	-3.3
74494	12	Z	500	27	0	7.7	7.8	1.1
78016	00	Z	500	1	0	0.0	12.0	12.0
78016	12	Z	500	16	0	7.7	7.8	0.9

TABLE 12

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
MONITORING CENTRE: BRACKNELL
MONTH:March, 95

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from each unique identifier for radiosonde TEMPs.

Area monitored :0°N - 90°N, 100°W - 40°E

Standard of comparison :Background field from Bracknell global model.

Position :Average latitude and longitude for period.

Observation times :00, 12 UTC.

Level monitored :100 hPa.

Element monitored :VECTOR WIND in $m\ s^{-1}$

Parameters monitored
- :NUM OBS :Number of observations available at level shown during period.
- :NUM GROSS :Number of gross errors at level shown during period.
- :% REJ :Percentage of observations rejected by quality control at level shown during period.
- :UBIAS,VBIAS:Mean difference of observations of U and V components from background values at level shown excluding those with gross errors.
- :RMS :Root Mean Square difference of observations from background values at level shown excluding those with gross errors.

GROSS ERROR LIMITS :Defined in Appendix I.2

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	% REJ	RMS	UBIAS	VBIAS
DBLK	00	V	100	1	0	0	5.0	5.3	-8.9
EHOA	00	V	100	1	0	0	4.1	-0.7	-3.8
EHOA	12	V	100	14	0	0	4.1	-4.5	3.4
FNOR	00	V	100	9	0	0	5.1	-1.7	1.4
FNOR	12	V	100	10	0	0	5.1	-2.7	-0.4
FNOU	00	V	100	8	0	0	2.4	0.1	-0.6
FNOU	12	V	100	8	0	0	2.4	-2.8	-0.2
FNPH	00	V	100	15	0	0	2.4	0.0	-1.8
FNPH	12	V	100	12	0	0	3.5	0.0	-1.6
FNRS	00	V	100	13	0	7	4.5	-4.2	0.7
FNRS	12	V	100	12	0	0	4.7	-2.2	-0.6
GACA	00	V	100	26	0	0	3.8	-1.1	0.7
GACA	12	V	100	24	0	0	3.0	-1.3	-1.1
GAMA	00	V	100	1	0	0	2.5	-3.6	1.6
JBOA	00	V	100	1	0	0	2.5	1.6	2.2
JIVB	00	V	100	1	0	0	2.5	-1.3	-3.8
LDWR	00	V	100	28	0	0	2.5	0.1	-1.0
LDWR	12	V	100	26	0	0	2.8	0.2	-1.4
OXYL	00	V	100	18	0	0	2.4	0.2	-0.4
OXYL	12	V	100	17	0	0	2.7	0.4	0.1
SHIPAF	00	V	100	1	0	0	2.9	0.6	-7.5
V2LV	00	V	100	23	0	0	4.6	-1.7	-0.2
V2LV	12	V	100	18	0	0	5.4	-3.4	0.7
V2LX	00	V	100	22	0	0	4.9	0.4	-2.0
V2LX	12	V	100	22	0	0	4.3	-1.7	-1.7
V3LV	00	V	100	1	0	0	3.4	-1.8	-2.3
ZDLG	00	V	100	1	0	0	6.5	-3.8	0.1
03953	00	V	100	28	0	0	3.1	-0.9	1.6
03953	12	V	100	26	0	0	3.3	-1.5	0.3
04018	00	V	100	27	0	0	2.9	0.6	0.3
04018	12	V	100	28	0	0	2.4	-0.5	0.1
04220	00	V	100	28	0	0	2.4	-0.3	1.2
04220	12	V	100	28	0	0	2.3	-1.5	0.8
04270	00	V	100	25	0	0	2.1	0.8	-0.3
04270	12	V	100	27	0	0	3.0	-0.4	0.4
04339	00	V	100	26	0	0	2.9	0.5	-0.7
04339	12	V	100	28	0	0	3.1	-0.4	-1.0
04360	00	V	100	27	0	0	2.7	-0.2	0.0
04360	12	V	100	28	0	0	1.9	-0.3	-0.2
08001	00	V	100	22	0	0	4.0	0.5	0.8
08001	12	V	100	26	0	0	3.0	-0.7	0.2
08508	00	V	100	28	0	0	2.5	1.4	-0.4
08508	12	V	100	28	0	0	3.3	0.2	-1.8
60020	00	V	100	28	0	0	4.1	1.5	1.3
60020	12	V	100	25	0	0	4.4	-1.8	1.6
71600	00	V	100	26	0	0	3.4	2.2	0.7
71600	12	V	100	24	0	0	3.9	2.2	0.9
72201	00	V	100	23	0	0	3.0	0.9	0.5
72201	12	V	100	24	0	0	4.2	-1.9	-1.7
72402	00	V	100	24	0	0	5.2	0.7	0.0
72402	12	V	100	24	0	0	3.2	-0.1	2.0
74494	00	V	100	24	0	0	2.8	0.6	1.5
74494	12	V	100	26	0	0	2.1	0.3	0.6
78016	00	V	100	1	0	0	4.3	-5.4	2.5

TABLE 13

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
MONITORING CENTRE: BRACKNELL
MONTH:March, 95

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from each unique identifier for radiosonde TEMPs.

Area monitored :0°N - 90°N, 100°W - 40°E

Standard of comparison :Background field from Bracknell global model.

Position :Average latitude and longitude for period.

Observation times :00, 12 UTC.

Level monitored :500 hPa.

Element monitored :VECTOR WIND in $m\ s^{-1}$

Parameters monitored

:NUM OBS :Number of observations available at level shown during period.

:NUM GROSS :Number of gross errors at level shown during period.

:% REJ :Percentage of observations rejected by quality control at level shown during period.

:UBIAS,VBIAS:Mean difference of observations of U and V components from background values at level shown excluding those with gross errors.

:RMS :Root Mean Square difference of observations from background values at level shown excluding those with gross errors.

GROSS ERROR LIMITS :Defined in Appendix I.2

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	% REJ	RMS	UBIAS	VBIAS
DBLK	00	V	500	1	0	0	3.1	3.9	-3.0
EHOA	00	V	500	1	0	0	4.8	0.1	-0.3
EHOA	12	V	500	18	0	0	4.8	-1.1	-0.2
FNOR	00	V	500	10	0	0	3.5	0.1	-1.5
FNOR	12	V	500	10	0	0	5.1	-0.6	-0.5
FNOU	00	V	500	9	0	0	2.7	-1.1	-0.2
FNOU	12	V	500	9	0	0	2.7	-0.4	0.5
FNPH	00	V	500	15	0	0	2.7	0.7	0.1
FNPH	12	V	500	12	0	0	3.3	1.6	-0.5
FNRS	00	V	500	13	0	15	4.6	0.7	0.2
FNRS	12	V	500	13	0	0	6.8	-0.6	1.0
GACA	00	V	500	26	0	0	2.4	-0.3	0.9
GACA	12	V	500	25	0	0	2.6	0.0	-0.4
GAMA	00	V	500	1	0	0	2.8	-0.8	3.6
JBOA	00	V	500	1	0	0	2.8	-5.3	-2.5
JIVB	00	V	500	1	0	0	2.8	-0.2	-1.0
LDWR	00	V	500	29	0	0	2.8	0.0	0.2
LDWR	12	V	500	26	0	0	4.8	-1.3	0.2
NNPJ	00	V	500	1	0	0	4.2	1.4	-2.5
OXYL	00	V	500	18	0	0	4.2	-0.1	0.7
OXYL	12	V	500	20	0	0	4.1	0.1	-0.4
SHIP	00	V	500	1	0	0	5.9	-1.9	-2.5
SHIP	12	V	500	1	0	0	5.9	-3.6	-4.3
SHIPAF	00	V	500	3	0	0	5.9	-1.7	2.0
SHIPAF	12	V	500	1	0	0	5.9	4.8	5.8
V2LV	00	V	500	25	0	0	9.2	1.0	-0.3
V2LV	12	V	500	20	0	0	3.0	-1.2	0.5
V2LX	00	V	500	23	0	0	2.0	1.9	0.3
V2LX	12	V	500	24	0	4	3.6	-1.1	-0.9
V3LV	00	V	500	1	0	0	2.7	-0.9	-1.0
ZDLG	00	V	500	1	0	0	2.5	2.0	1.5
03953	00	V	500	28	0	0	5.4	0.8	-0.1
03953	12	V	500	27	0	0	3.1	-0.1	1.5
04018	00	V	500	28	0	0	3.5	0.1	0.2
04018	12	V	500	29	0	0	4.1	-0.9	0.0
04220	00	V	500	29	0	0	2.8	0.7	1.0
04220	12	V	500	29	0	0	5.1	-1.1	0.8
04270	00	V	500	29	0	0	4.7	-0.5	0.2
04270	12	V	500	28	0	0	4.4	0.1	-0.3
04339	00	V	500	28	0	0	5.4	-0.5	3.1
04339	12	V	500	28	0	0	4.8	-0.7	0.7
04360	00	V	500	27	0	3	4.1	0.7	1.0
04360	12	V	500	28	0	0	5.0	-1.5	0.3
08001	00	V	500	25	0	0	3.4	1.8	1.2
08001	12	V	500	28	0	0	3.4	0.4	0.3
08508	00	V	500	28	0	0	3.2	0.5	1.0
08508	12	V	500	29	0	0	2.8	-1.2	-0.1
60020	00	V	500	28	0	0	2.7	0.0	-0.3
60020	12	V	500	26	0	0	3.7	-0.5	0.8
71600	00	V	500	27	0	0	3.0	0.5	0.8
71600	12	V	500	26	0	0	4.5	1.0	1.5
72201	00	V	500	26	0	0	3.1	-0.2	-0.6
72201	12	V	500	25	0	0	2.8	-1.0	-0.8
72402	00	V	500	26	0	0	4.2	0.4	0.8
72402	12	V	500	27	0	0	3.3	1.2	0.7
74494	00	V	500	26	0	0	2.7	0.3	1.3
74494	12	V	500	26	0	0	2.7	0.4	1.0
78016	00	V	500	1	0	0	3.1	-2.3	4.8
78016	12	V	500	15	0	0	3.1	-1.2	0.0

APPENDIX I

1. The gross error limits for observation minus background differences of geopotential height in Tables 5,10 and 11 are:-

Level (hPa)	Geopotential height (metres)
1000	100
850	100
700	100
500	150
400	175
300	200
250	225
200	250
150	275
100	300
70	375
50	400
30	450

The weighted RMS values used in Table 5,10 and 11 are calculated using the following weights:-

Level (hPa)	Weight
1000	3.70
850	3.40
700	2.90
500	2.20
400	1.90
300	1.60
250	1.50
200	1.37
150	1.19
100	1.00
70	0.87
50	0.80
30	0.64

2. The gross error limits for observation minus background differences of windspeed in Tables 6,12 and 13 are:-

Level (hPa)	Windspeed m s^{-1}
1000	35
850	35
700	40
500	45
400	50
300	60
250	60
200	50
150	50
100	45